BEDALES SCHOOL

WORK OF EACH
FOR WEAL OF ALL

1431

BEDALES SCHOOL LIBRARY.

No. Vol I

by

Summer *Term, 1928*

This Book was made and bound in the School. The carving on the cover was mainly done by N. Brooke, age 16. The folding and trimming of the pages by D. Jarintzoff and H M Gimson, age 13. Part of the mounting by H M Gimson and by A J Monks, age 14. The sewing by A J Monks.

BEDALES SCHOOL

PETERSFIELD, HANTS

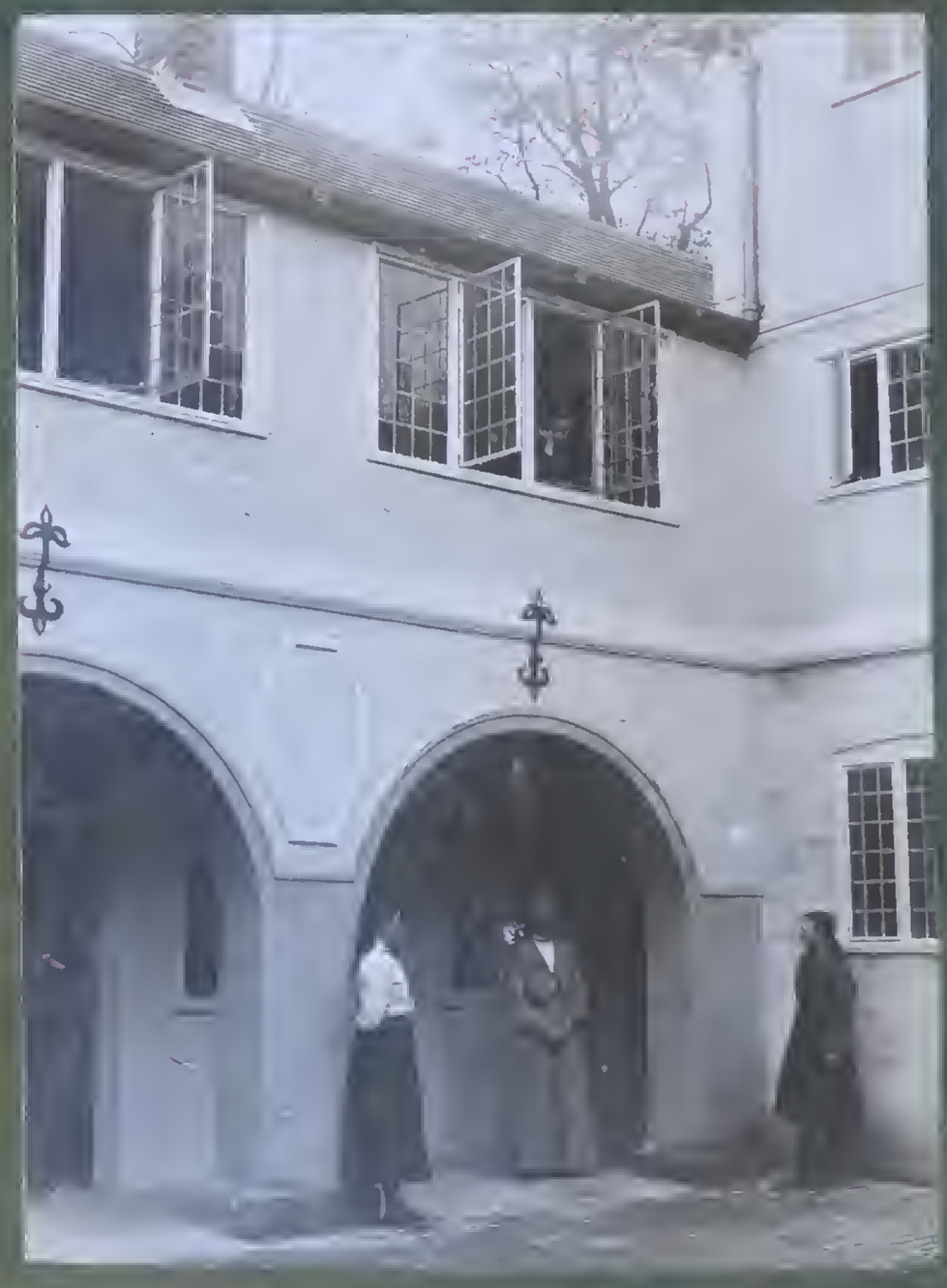
ENGLAND

This is a boarding school for boys and girls, covering all ages between the Kindergarten and the University. It is a private school, under the sole control of the Founder and Headmaster J. H. Badley.

I N D E X .

History. The School was opened in January, 1893, at first for boys only, in the country near Hayward's Heath, in Sussex. The first term it numbered three boys. A second house was added in 1897. By 1898 the numbers had risen to over 50 boys. It was then decided to open the School to girls as well as boys, and a third house was taken for this purpose. Four girls joined the School in this year. An estate in the neighbourhood of Petersfield was now bought, and new buildings erected on it; and in 1900 the School, then numbering 68 boys and 7 girls, was removed to its present site. Further buildings have been added since 1900, and a separate Junior School was opened in 1908, to receive children under 10. The School now numbers 90 boys and 38 girls.

View of Courtyard, - the Girls' House.



Site of the School

The School is in the open country, a mile and a half north of the market town of Petersfield, on the line from London to Portsmouth. Petersfield is 55 miles from London, and 16 from Portsmouth. The School stands on the slope of the North Downs, looking across the Rother Valley to the South Downs, 5 miles distant. The position was selected as combining a healthy situation with beautiful surroundings, and a good neighbourhood for all kinds of Nature study, with abundant archæological interest. Selborne, the home of Gilbert White the naturalist, is within easy reach on one side; Hayling Island and the sea on the other, as also Portsmouth and its Dockyards, and Winchester and Chichester, cathedral cities, dating from the Roman occupation.

Map of the School Estate
from Boys' own Survey .

B.L. Gimson.

Age : 16½.

Map of School Estate

FARM

BEE HOUSE

ENGINE HOUSE

SLEEPHURST

Gardens

Tennis

Kitchen Gardens

GARDENERS COTTAGE

Hockey Field

Pump House

SANATORIUM

DRAINS

To Petersfield

1/4 mile.

Explanation of Colours.

over 350 ft.	
over 345 ft.	
over 340 ft.	
over 335 ft.	
over 330 ft.	
over 325 ft.	
over 320 ft.	
over 315 ft.	
over 310 ft	
over 305 ft.	
over 300 ft.	
over 295 ft.	
over 290 ft.	
over 285 ft.	
over 280 ft.	
over 275 ft.	
over 270 ft.	
over 265 ft	

[illegible]

W.H. LIVENS AGE 15

SCALE ½" = 1 Chain (22 yards)

PLOUGHED LAND
GRASS FIELDS
TREES & WOODS
GARDENS & ORCHARDS
BUILDINGS
DRIVES & PATHS
WATER

5 STAFF HOUSE

FARM BUILDING 4

BEE HOUSE

3 GYMNASIUM

6 DYNAMO HOUSE

2 GIRL'S HOUSE

TENNIS LAWN

ORCHARD

SCHOOL GARDEN

WORKSHOP 7

BEDALES

1 QUADRANGLE

8 NATURAL HISTORY ROOM ETC

HOCKEY FIELD

SCHOOL GARDEN

TENNIS LAWN

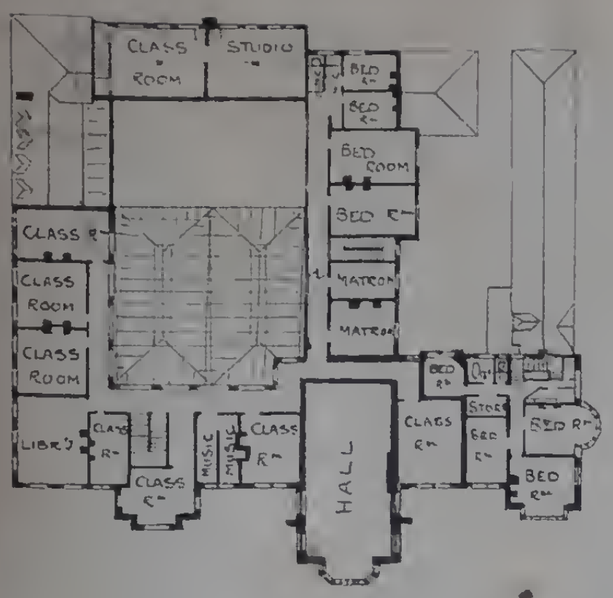
SWIMMING BATHS

9

FILTERING TANKS

PLAYING FIELD

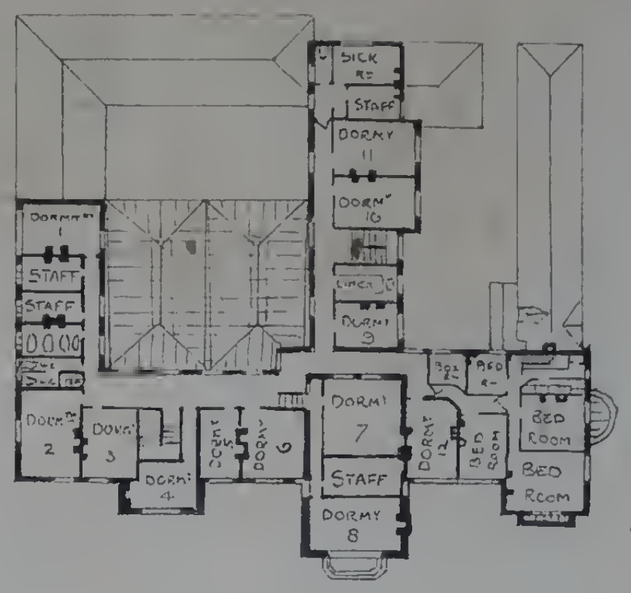
10 SANATORIUM



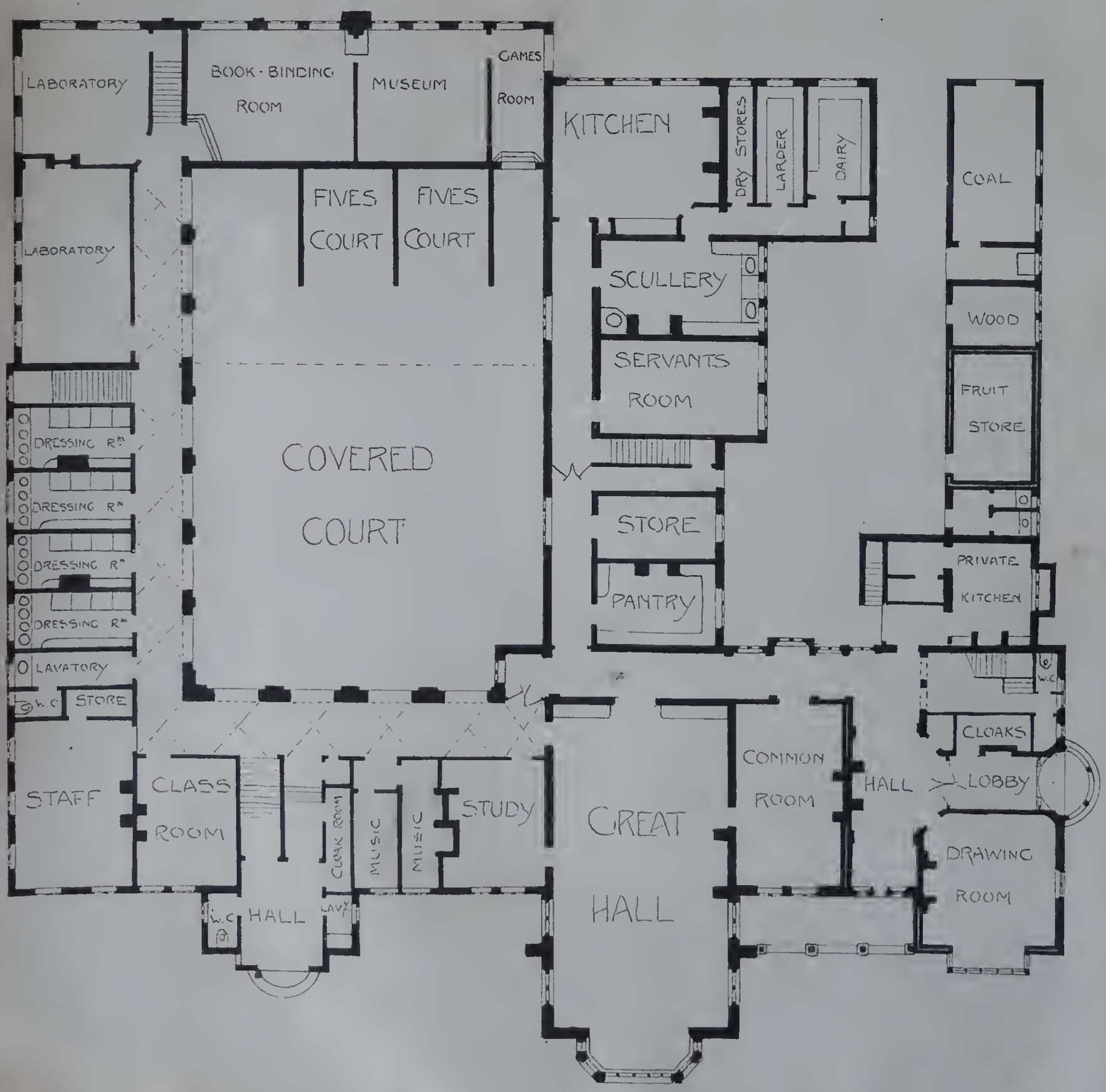
First Floor Plan

Scale

1/64 inch = 1 foot



Second Floor Plan



Ground Floor Plan.

Scale 3/64 inch = 1 Foot

DRAWN BY W.H. LIVENS. [illegible] 15 . [illegible]

Staff. The Staff of the main School numbers autumn term 1913, twenty-two, besides the headmaster; seventeen resident teachers,- ten men, seven women,- and five visiting teachers,- three men, two women.

Of these, two teach mainly classics, history, &c.:

two, mathematics;

two, science;

two, modern languages and history, &c.;

two, drawing;

two, handwork;

three, music,- piano, violin, and 'cello;

one, surveying;

one, farm work;

one, drill; and

four are matrons of the different houses and of the Sanatorium.

The Lower School is in the charge of a married master and his wife, aided by two women teachers.

Total Staff:- men, fifteen; women, twelve.

The administrative machinery of the School is divided into two:-

1. The Main School of boys and girls over 11;
2. The Junior School of boys and girls under 11.

The Main School consists of two houses,- one for boys, one for girls. These have a large amount of self-government. At the present time there are five prefects among the boys and two among the girls. These are responsible for the maintenance of order throughout the School. They consult together upon all matters affecting boys and girls in common, but have sole authority in their own houses. Besides these, there are in each house heads of dormitories and others with special duties assigned to them. Captains of games, and various committees of management are elected by the boys and girls to control the different departments of the School life.

The Junior School.

For teaching purposes the School is divided into three blocks:--

The Lower School, of children from seven or eight to ten or eleven. This will henceforward be distinguished by the number III;

The Middle School, of children from ten or eleven up to fifteen or sixteen,- henceforward to be distinguished by the number II;

The Upper School, of those from fifteen or sixteen, up to eighteen or nineteen, to be distinguished by the number I.

The Lower School is the period of elementary training, upon lines developed from the Kindergarten.

The Middle School is the period of general training, without direct reference to the future career. For the subjects taken, and the number of hours given to each, see the summary on the opposite page.

The Upper School is the period of special training, in accordance with the natural bent and capacity, along the lines required by the later career, or by the next stage of training. There is in the Upper School, therefore, a considerable range of choice. At this stage, for example, a boy may devote himself chiefly to classics, to Science, to modern languages, or to practical work. But whatever line is followed, all must take at least one modern language, and English literature and composition.

HEAD WORK.		HAND WORK, &c.	
Lower School. III. Average age, 9.			
	Hours per week.		Hours per week.
English, (including reading, writing, grammar, composition, literature, history, geography)	8½	Drawing	2
French	3½	Gardening	2
Arithmetic and geometry	5	Modelling, basket-making &c	4
Nature-study	1	Music, sight-reading, and class-singing	2
Total	18.	Total	10.
Middle School.			
Lower Middle. IIb. Average age, 12.			
English (including composition history, literature, geography)	9	Drawing (including blackboard, model and memory drawing, brushwork, design	3
Latin	3½	Wood work (for boys)	2
French	3	Cooking, sewing &c(for girls)	
Mathematics (arithmetic and geometry)	5	Surveying	1
Nature-study	3½	Gardening	2
		Carving, modelling or basket-making	2½
		Music, sight reading, class singing	3½
Total	24.	Total	14.
Upper Middle. IIa. Average age, 14½.			
English (including composition, history, literature, geography)	9	Drawing from cast or objects, and design	2
Latin	6	Wood work (for boys)	2
French or German	3	Cooking, sewing &c(for girls)	
Mathematics (arithmetic, algebra, geometry)	4½	Surveying	1
Science	3½	Gardening	2½
		Shooting	½
		Bookbinding, wood carving, modelling, &c.	2½
		Class singing	2½
Total	26.	Total	13.
Upper School. Average age, 17.			
Classics	9	Drawing, now optional.	
Modern languages	6	Workshop, woodwork (for boys) metal work	2 -4
Mathematics	4½	Surveying	1½-3
Science	9	Outdoor work in farm or garden, and care of playing fields	2 -3
History and literature	7½	Shooting	½
		Class singing	2½
Total	36.	Total	8½-13.

Note. In the Upper School no boy takes all the above subjects, unless required to do so for examinations; otherwise, he may, for example, give up either classics or Science in favour of the other, and may, if necessary, give six additional hours to further work in his special subject.

Arrangement of the day. Roughly speaking, the morning is given up to the severer forms of head work in mathematics and Science; the afternoon, to hard work,- wood and metal work, surveying, drawing, gardening, cookery, sewing and music; or to games and expeditions; and the evening, partly to the lighter forms of head work, such as history and literature; and partly to social occupations, such as singing, dancing, music, debates and lectures; or such forms of hand work as bookbinding, wood carving, &c.

Breakfast is at 7-30. Before this there is no work, except an hour's preparation for the Upper School. Others may get up earlier, and give the time to their own hobbies; and all must go for a short run before breakfast.

After breakfast, half-an-hour is spent in bed-making and attending to bodily needs. Between 8-30 and 1, there are five class periods, of length varying with age, with intervals between. One of these periods is usually,- for the younger classes always,- given to drill or manual work.

After dinner, all must change into outdoor clothes for the afternoon. Two afternoons are given to different forms of manual work; two to games; and two are free for natural history and for expeditions, and private hobbies of all kinds, as well as games. Before tea, all change back into house clothes.

There is an hour's class after tea. Half-an-hour is given to singing; and half-an-hour to quiet reading; and the remaining hour to the various occupations above mentioned; The younger children go to bed at 7-30; the older at 9.

Upon Sunday, breakfast is at 8-30. An hour is then given to letter writing; another hour to bed-making and singing practice; the rest of the morning is free for church going, if parents so desire, or for the pursuit of individual interests. In the afternoons all must go for a good walk. After tea there are two hours for reading and then a short undenominational service that all attend.

Time Table of the Lower School.

	MORNING							AFTERNOON				EVENING		
	8 A.M.	9	10	11	12 NOON	1 P.M.		2	3	4	5	6	7	
MONDAY	GETTING UP MORNING RUN	BREAKFAST	CLASS WORK	DRILL	GARDENING	DINNER	CHANGING	MUSIC	GAME		READING	TEA		
TUESDAY					FREE TIME CLASS WORK			NATURAL HISTORY WALK		READING	DRAWING			
WEDNESDAY					DRILL	FREE TIME INSPECTION		FREE TIME						
THURSDAY				DRILL	FREE TIME			DRAWING	GAME		READING			
FRIDAY									FREE TIME					
SATURDAY					GARDENING			FREE TIME						
SUNDAY		BREAK FAST	LETTER WRITING	WALK		DIN NER		WALK				TEA		

Time Table of the Middle School.

	7 A.M.	8	9	10	11	12 NOON	1 P.M.	2	3	4	5	6	7	8	9
MONDAY					CLOTHES INSPECTION			WORKSHOP,	GAME					HANDICRAFTS	
TUESDAY					DRILL			DRAWING, OR GARDENING				HISTORY AND LITERATURE			
WEDNESDAY	GETTING UP MORNING RUN	BREAKFAST	BEDMAKING ETC	MATHEMATICS AND LATIN	BREAK (AND LUNCH)	SILENCE AND MODERN LANGUAGES	INSPECTION	CHANGING	FREE HALF		CHANGING	TEA	SINGING	READING	CONCERT OR DEBATE
THURSDAY								WORKSHOP,	GAME					HANDICRAFTS	PRAYERS GOING TO BED
FRIDAY					DRILL			DRAWING, OR GARDENING.						DANCING	
SATURDAY					CLOTHES INSPECTION.			FREE HALF						LECTURE	
SUNDAY		GETTING UP	BREAK FAST	LETTER WRITING	BED MAKING PRACTICE	FREE TIME	DIN NER		WALK		TEA		READING	SERVICE	

Time Table of the Upper School.

	6 A.M.	7	8	9	10	11	12 NOON	1 P.M.	2	3	4	5	6	7	8	9
MONDAY							CLOTHES INSPECTION		SURVEYING	GAME						
TUESDAY							DRILL		WORKSHOP	SCIENCE						
WEDNESDAY	GETTING UP	PREPARATION	MORNING RUN	BREAKFAST	REDMAKING ETC.	MATHEMATICS AND MODERN LANGUAGES		DINNER	FREE	HALF		TEA	HISTORY AND LITERATURE	SINGING	READING, DEBATES, LECTURES ETC.	PRAYERS GOING TO BED
THURSDAY							INSPECTION	CHANGING	SHOOTING	SCIENCE GARDENING	CHANGING					
FRIDAY							DRILL		WORKSHOP	SCIENCE						
SATURDAY							CLOTHES INSPECTION		FREE	HALF						
SUNDAY				GETTING UP	BREAK FAST	LETTER WRITING	FREE TIME	DIN NER	WALK			TEA	READING	SERVICE		

H.M Gimson (age 13)

SCHEME OF WORK DONE DURING A SINGLE TERM.

Below is given a list of the actual work done during the Autumn Term, 1905, in four classes taken from the Lower School, the Lower Middle, upper Middle, and Upper School respectively

I. Language and Literary subjects:-

NAME OF CLASS. AVERAGE AGE:	LOWER SCHOOL (IIIb.) 8.8	LOWER MIDDLE III. (IIb3.) 11.6	UPPER MIDDLE I. (IIa1.) 14.9	UPPER SCHOOL (Ia.) 17.3
ENGLISH. **Geography.**	Miss BORSCHE. Drawing plans of room and garden. Physical geography of England and Wales with special notice of river basins. **Hours per week: 1¼**	Miss MARTIN. Journeys. **Hours per week: 1h. 40m.**	Miss MARTIN. Russia. **Hours per week: 1h. 40m.**	
History.	Miss BORSCHE. Stories about Ancient Britons and the Roman invasion and Arthurian legends. **Hours per week: 1¼**	Miss MARTIN. England under the Saxons and Normans. **Hours per week: 3**	Mr. BADLEY. History of the Hebrews, down to the foundation of the Kingdom. **Hours per week: 3**	Mr. KERRY. General European History 1815-1880. "Revolution & Reaction in Modern France."—1815-1880. (Dickinson). **Hours per week: 3**
Literature.	Miss BORSCHE. Reading early legends. "Black Beauty." Poetry learnt. **Hours per week: 2¼**	Miss MARTIN. Poems learnt by heart. Reading—The days of Charlemagne. **Hours per week: 3**	Mr. BADLEY. Genesis, Deuteronomy, Ruth, Job. **Hours per week: 3**	Mr. GRUBB. Lockhart's Life of Scott and works suggested by it. **Hours per week: 3.**
Composition.	Miss BORSCHE. Writing and dictation. Writing notes on the history, geography and nature study. **Hours per week: 2¾**	Mr. GRUBB. Picking out the parts of speech. Oral composition. **Hours per week: 1½**	Mr. GRUBB. Paragraph writing. **Hours per week: 1½**	Mr. GRUBB. Essays connected with the Literature. More advanced paragraph writing. **Hours per week: 1**
Grammar.	Miss BORSCHE. Function of words. Noun, verb, adjective. **Hours per week: ¼**	Miss MARTIN. Simple parsing and analysis. **Hours per week: 1h. 40m.**		
MODERN LANGUAGES: **French.**	Mr. SCOTT. Songs. Scenes. Conversation. **Hours per week: 3¼**	Mr. SCOTT. Simple accidence. Reading and Conversation. Songs. Scenes. **Hours per week: 2⅔**	Mr. POWELL. The more essential accidence and syntax. Easy Poems. Composition. Mérimé: Mateo Falcone. **Hours per week: 3**	Mr. POWELL & Mr. WILLIAMS. All essential accidence and syantax. Philology. Composition. Contes Modernes. Selections: Modern Prose and Verse. **Hours per week: 5¾**
German.	Miss BORSCHE. Conversation. Scenes acted. Songs. Writing easy sentences. **Hours per week: 3¼**		Miss VON MOLLIN. The more essential accidence and syntax. Simple Composition. Lehrbuch der deutschen Sprache. **Hours per week: 3**	Mr. POWELL. All essential accidence and syntax. Composition. Niese: Aus dänischer Zeit. Andrä's Deutsche Geschichte. Selected Modern Prose and Verse. **Hours per week: 5¼**
CLASSICS: **Latin.**		Mr. WILLIAMS. 1st and 2nd Declension. Nouns and Adjectives. Verbs, present tense. Easy exercises and translation. "Ora Maritima." **Hours per week: 2½**	Mr. KERRY. Most regular accidence. Livy: Hannibalian War. Prose composition. **Hours per week: 6**	Mr. KERRY. Revision of accidence and syntax. Vergil: Aeneid IV. V. Prose composition. Verse composition. **Hours per week: 4**
Greek.				Mr. KERRY & Mr. WILLIAMS. Revision of accidence & syntax. Plato: Apology and Crito. Prose composition. **Hours per week: 5**

B. Mathematics and Science:-

NAME OF CLASS. AVERAGE AGE:	LOWER SCHOOL (IIIb.) 8.8	LOWER MIDDLE III. (IIb3.) 11.6	UPPER MIDDLE I. (IIa1.) 14.9	UPPER SCHOOL (Ia.) 17.3
MATHEMATICS: Arithmetic.	Miss Borsche. Problems on the four simple rules with numbers up to 1,000 Money and lineal measure with the three lowest units. **Hours per week: 3¼**	Mr. Wells. Mental Arithmetic Simple Rules —Revision Notation and Numeration Easy Vulgar Fractions **Hours per week: 3**	Mr. Garstang. General Theory Exercises Square Root **Hours per week: ¾**	Mr. Garstang. Harder Problems **Hours per week: ¼**
Algebra.			Mr. Garstang. Revision Theory of Simple Functions Quadratic Equations Graphic method **Hours per week: ¾**	Mr. Garstang. Ratio, &c. Revision Co-ordinate Geometry Trigonometry Differential Calculus (Lodge) **Hours per week: 2¼**
Geometry.	Miss Borsche. Cut out and draw simple figures: describe and compare them Line tracing **Hours per week: ¾**	Mr. Wells. Practical Geometry Bisection of lines and angles Perpendiculars **Hours per week: 1½**	Mr. Garstang. Practical Geometry Theory, Bk. 1. (A.I.G.T.) Limits & Tangents to Curves Trigonometry **Hours per week: 3**	Mr. Garstang. Exercises on Euclid I-VI Revision Special Work for Examinations **Hours per week: 1½**
SCIENCE.	Miss Borsche. Collect seeds out of garden and compare them Bulbs and autumn leaves **Hours per week: ½**	Mr. Unwin. Measurement of length, area, volume, weight **Hygiene:** Rest & movement The bones and muscles **Hours per week: 2½**	Dr. Garrett. **Chemistry:** Investigation of the laws of chemical action Determination of formulae of simple compounds Equivalents **Hours per week: 3½**	Dr. Garrett. **Chemistry:** Phosphorus, carbon, sulphur, silicon, boron, elementary organic chemistry, analysis **Mechanics of Liquids:** Hydrostatics, capillarity, viscosity **Electricity:** Electrolysis, electromagnetic induction, dynamos and practical applications of electricity **Hours per week: 9¼**

C. Manual Work and Art:-

Drawing.	Miss Borsche. Blackboard drawing Drawing from nature and from memory Mrs. Scott. Brushwork from nature and simple design **Hours per week: 1½**	Miss Martin. Blackboard drawing and designing Brush work Memory drawing Easy models **Hours per week: 2**	Miss Martin & Mr. Richardson. Model and memory drawing Designing Drawing from the cast **Hours per week: 2**	
Surveying.		Mr. Grubb. Map making by means of compass and tape **Hours per week: 1**	Mr. Grubb. Plan of part of School Orchard including names of trees **Hours per week: 1**	Mr. Grubb. Contoured map of School Estate *(continued)* **Hours per week: 1¼—3**
Gardening, &c.	Helping in the kitching garden Care of their own plots **Hours per week: 2**	Mr. Unwin. Entire work of school (experimental) garden according to season. **Hours per week: 2** | **Hours per week: 2**		Care of playing fields Work in school garden and orchard **Hours per week: 2**
Workshop. (Mr. Halliday.)		Graded exercises and models involving these exercises, each boy making a working drawing of the model or exercises before working it.		Objects of use in the school Private work **Hours per week: 2**
Music. (Mr. Powell.)	Rudiments of Music and Sight Reading **Hours per week: ¾** | **Hours per week: 1**			
Singing.	Mrs. Scott. School Songs and Rounds **Hours per week: 1¼**	Mr. Powell. School Songs— The Revenge. (C. V. Stanford) Mendelssohn's Midsummer Night's Dream Music **Hours per week: 3**		
Orchestral Music. (Mr. Van de Velde Miss Smith.)		Mendelssohn's Midsummer Night's Dream Music **Hours per week: 3**		

21

E N G L I S H .

Aim. The aim of the teaching of the mother tongue is to enable children to write, read, and speak the English language correctly and to appreciate its construction and use; and so to increase at once their power of expression, and also their power of appreciating literature.

Method. In the Lower School much time is necessarily given to the more mechanical side of reading and writing, and to the beginning of the study of formal grammar by analysis into parts of speech and predicates &c.. A good deal of time is also given to composition. At first this is entirely oral,- the aim being to get the children to express their thoughts on some familiar subject, and then, as the result of questions on the part of the teacher to reduce them to a more connected and expressive form. The description or narration so composed is first written by the teacher on the blackboard, and either copied from this by the class, or used for a dictation in another lesson; or after the subject has been discussed, separate compositions may be written by the children, without the intervention of the blackboard.

Different Fruits
that grow on Trees.
We looked at the fruit of
an oak, the chestnut,
the ash, the laburnum,
the sycamore.
We compared them
and found they

were alike ~~as~~ in some ways and different in others. They all have a case or shell for protection. They will all grow into trees if we will sow them. The sycamore - seeds and ash - keys have both got wings. The sycamore-seeds always grow in pairs; and the ash - keys grow single on a stalk in brunches. The sycamore - seed can fly better than the ash - key because it has a larger win - It flies like a butter - fly. We opened a sycamore seed - vessel and found that it was lined with white silky hairs.

From a Composition Note-book (Diana Jacks, age 8).

A Railway Journey

Chapter I.

A fresh wind was blowing. the rain was pattering on the windows, and forming pools on the ledges at the bottom. There were big hills like great masses of black on each side of us, it was very dark and dreary and we had nothing to do.

The engine whistled and in a few minutes we found ourselves in a tunnel. in which were many lights, and some men working. Suddenly a train whistling by, and lit up our train with a shower of sparks

Not long after, we reached the other end of the tunnel, and we emerged the moon had risen, and was flooding the hills with light.

After about a quarter of an hour we came to a smoky town, which was lit up by the glare of the blast furnaces. Presently we heard another whistle, and we steamed into a large station, which was crowded with people waiting for the train

When we got out, our seats were at once taken by a large family, and we went to look for our luggage

When we reached the van we found that it was not there; we rushed to another, but we were just too late as the train was starting.

After going to the lost property office we tried to find a cab. But they were all engaged except one, the driver of which was drunk.

Joint composition of Class I [illegible]. Average age 11;

In the Middle School some time is still found in the lower classes for the teaching of writing and the practice of dictation; and afterwards those who are unable, or unwilling, to write well and with ease, may be set during certain times in the week that would be otherwise given to private reading, to practise writing in copy books or otherwise. In the same way, practice is still kept up to those who are unable to read with ease and expression during the times in the evenings either be devoted to amusements,- such extra reading and writing being rewarded in the light of a penalty from which industrious will allow exemption. Once a year, it may be [illegible], reading prizes are offered, for which the whole School may compete publicly, in divisions arranged according to age or ability.

The formal study of grammar is continued in English until Latin is begun at the age of 11 or 12;- after which, it is mainly confined to that and the other languages taken.

Two hours a week are still given to composition, which includes original pieces of description or narrative; accounts of expeditions; or imitations of pieces read; such pieces are selected and read by the teacher, as affording good models for the kind of composition afterwards to be written. The children then choose their own subject, and try to catch as much as possible of the spirit and style of the piece just read. Mistakes in spelling and expression are pointed out by the teacher, and corrected by the children; and the whole is then re-written.

Is, however, also here, while encouraging interest and appreciation, does not give sufficient formal training in the construction of sentences, or of planning essays, more formal work of this kind is also done; and as this is to be found the other Forms, by Fitzedge and Arnold, it need not.

A SNOWSTORM.

It is three o'clock in the afternoon and the sky is covered with little grey clouds which go scurrying through the sky before a bitterly cold N.E. wind. Here and there a little snowflake is driven twirling in the wind or settling down among the waving grass. The sky is growing darker, lights are lit in the houses, and the snow is driving fiercely before the howling wind. As it grows darker the snow falls thicker, and the sky is blotted out with a whirling mass of little flakes, and night falls.

When day breaks all nature is still. The fields which were green, the cottages that were red, now form a vast white expanse of snow. The clouds, which were small and grey, are long and thin, stretching across the sky, and are tinted with the faint rays of the rising sun: the wind is hushed and the icicles hang glittering from the bare boughs of the oaks, which bend beneath the weight of snow. As the sun rises from a bed of pure gold the snow slowly melts, and the trees drip with water. The birds come out of their hiding places and sing merrily on the early spring morning.

E.V.N.

THE MILL STREAM.

The mill-stream lay still, bathed in the hot sunshine, and the flies skimmed over its surface, followed eagerly by the fleet swallows. Under the bank the water lay still and dark with the reflection of overhanging foliage, a place where the water was cool and deep. The shadows were as clear as the objects they reflected. Suddenly there was a splash, and immediately the swish of churned water; the face of the smooth cool river was broken into a thousand ripples, and the reflections danced and quivered. Then there rose upon the surface the laughing and dripping face of the bather, who struck out with glistening arms for the distant bank, and plunge after plunge broke the water into shining streaks. The cows lay on the bank slowly and solemnly chewing their cud in the mid-day heat, the flies buzzing constantly round them. The sun beat down upon the river, the fields, the foliage and every living thing, bathing all in a shimmering heat. The sky was a deep blue, and over this vault passed light clouds, which were dazzlingly white with the reflected light of the sun.

L.E.K.E.

Exercises in composition taken from the Pedales 'Record.'

(Norman, age 13; Ellis, age 15½; Gibbs, age 15; Crowston, age 17; Green, age 16.)

ON GINGER PUDDING.

(A Fragment in the manner of "Essays of Elia").

I like ginger pudding. This may seem an astonishing fact, but all the same it is true. I look forward to the memorable day when we have that pudding. Picture to yourself the anxiety to see if it is ginger pudding and not some other dish which may be better for you but not so nice for your palate. It always seems to me, I don't know whether you have noticed it or not, that most nice things are only considered in the light of forbidden sweets, and that you are only allowed them on an average of once a month, and then in small quantities; and to my knowledge ginger pudding is the only one which is not included in that list.

There is a custom at our school that if any boy's hands are dirty he must stand out (having washed his hands) till half of the dinner is over, and in this way miss his pudding. Now on Thursday, this memorable pudding day, I always pity the poor boy who has had the misfortune to have dirty hands. I can see him now standing by the door watching with hungry eyes the puddings being brought in. If this boy determines to look the other way he is always reminded of the presence of this pudding by its delicious smell. O! that smell! Was there ever anything more tempting to the nose? If you have the power of deciding what dreams you want to have, pray for the sight and smell of a ginger pudding. It has been said that nothing earthly is entirely happy, and certainly in a ginger pudding dream that is true, because when you wake up and find that your dream has not really come true your disappointment is great.

People talk of philanthropy. They keep soup houses. Why not ginger pudding houses too? I do not mean houses made of ginger pudding (as in the fairy story), but houses which contain ginger pudding which can be freely distributed to the poor.

E.N.G.

STUDIES IN STEVENSON.

[In the First Class Stevenson's Letters have been read and compositions written on their model. Two specimens are here given.]

I.—AN INVITATION TO A FRIEND.

Sir,

In addition to the demands, many and various, on your good nature, which I made in my last letter, you will remember I remarked at that time that I was keeping one for my next venture. This indeed, Sir, is the crowning demand of all; for, to be plain, I demand nothing less than your own worthy person, for the period of at least one month. If you concede to my wish, you can do nothing which will better please, Sir, yours indebtedly. If you refuse I shall break off all further communication with one so harsh for a period of, at the very least, the said month. I do not propose entirely to enthral your noble person while it is in my power. You will be allowed a moderate amount of freedom, only you will not be permitted to work for more than one hour a day. The rest of the time you will have to spend trying to enjoy and rest yourself as best you can, aided as much as possible by, Sir, your faithfully. All here are looking forward to seeing you soon, and quite ignore the incredible possibility that you may have the audacity to refuse our invitation.

I remain, Sir, yours ever,

T.E.C.

II.—TO A FATHER, CONTAINING A MODEST REQUEST FOR PECUNIARY ASSISTANCE.

Honoured Sire,

As you must already be aware I have, during the past month, been under medical treatment for a disease of a most objectionable nature called influenza. I believe that for this medical treatment and for the numerous evil smelling physics, with which I was then dosed, you have had to pay several pounds. Now all this illness (and especially the physic) was very little to my taste, and since you have spent so much on giving me what is unpleasant, it seems to me only just that I should be recompensed with something pleasant. Do not imagine, Sir, that I am begging; I would not beg for worlds. I am but asking what justice entitles me to demand. I therefore send you this letter, in the hope that I shall soon receive from you a postal order for the sum of two shillings and sixpence. This is the least that I think I ought to ask, though not the most I think I could find a use for.

Ever your obedient son,

G.W.A.G.

...er school. ...good deal of time is given to reading aloud in the literature lessons at this stage; and by this means, and in the plays that are acted from time to time, some power of elocution and just expression is aimed at.

As the study of grammar, including some idea of historical grammar, is being followed in at least two other languages, it is not at this stage continued in English, except for special purposes.

Composition however, still includes some formal study of construction; in which we find "Composition and Rhetoric", by Lockwood and Emerson, very useful; as well as a wider range of original work in prose and verse. The history and literature lessons afford abundant material for essays, and prizes are offered for work of this kind both in prose and verse, done out of class hours, and without help.

Magazines.

One of the outcomes of modern life is the modern magazine. Twenty years ago there were no magazines in our sense of the word. Now there are many & they increase in number every year. It is perhaps worth while to inquire into the cause of this, for I think everyone will agree that their popularity is not due to any merit of their own.

For the last five decades or so, trade & commerce have ~~been~~ everywhere been increasing very rapidly. Business life in the "good old days" was a vastly different thing compared to what it is now. Then the old merchants used to plod along as they chose, worked when & liked & took or left an opportunity for a bargain just as it pleased them. But now all is altered If a man is not continually working and doing all he can to further his business, he is left behind. Consequently he has little or no time for reading. What little he has got, he does not care to ~~X~~ spend on a serious book He only wants his mind taken off the cares & worries of business. And so when he comes home tired, late in the evening, he reads a magazine.

Modern business life, then, is the cause of the present popularity of magazines; but what will the result be? A

years ago, when there was only a little current literature, people had a limited supply of standard works alone. They practically could only get good English to read. There was no 'trash' then. So they were almost, one might say, compelled to adopt a good style of their own - they had no bad styles to imitate. In this point too, matters are changed now. People as a whole have given up reading good books. They say they have not time. And although the demand for literature is increasing, it is chiefly for literature of the 'penny dreadful' type.

Unfortunately few good authors will write for magazines. For they know magazines are only read by people who are without the time or the ability to appreciate anything better; and so the standard of writing is very low, and it seems unlikely that it will ever be raised. All we can do We can only hope that in future times magazines will die out of their own accord for at present there is nothing we can do that will put a stop to them.

Exercises in Composition.

(J. Brooke. age 17).

PING=PONG.

A Mock-Heroic Poem.

O ye who in the upper circles move,
O ye who ping-pong play, and ping-pong love,
Ye who at Tooting and at Ealing dwell,
Give ear unto the story which I tell!
In Surbiton there stands a stately hall
Where nightly dogs and cats do yap and squall;
Here one bright evening in the month of May
Assembled were the champions for the fray;
Who came from far and near to gain renown,
And to attempt to win a laurel crown.
Of those who came, one seemed the best, to wit
Josephus Alphonse Eustace Howard Schmidt;
Whom, since his name doth occupy a line,
I shall, for sake of shortness, Joe define.
Now shouts the umpire loudly—that's to say
He intimates that they may start to play:
Now balls are hurled with violence across
The slender netting, or a gentle toss
From Joseph, who at present bears the palm,
Will give his dazed opponent quite a qualm;
Who, thinking that a slash would now be given,
Has aimed his racket at the boundless heaven;
He misses, and the point belongs to Joe.

But one more now, but one successful blow,
And then the crown, that even up to now
The opponent wore, will decorate Joe's brow.
But ah! how frail are hopes of mortal men;
The fates decree me other words to pen!
The audience now, in expectation high,
Scarce dare to breathe or move away the eye,
Lest by some hap some stroke they should not see,
For that to them great misery would be—
All except one; the fond mamma of him
Whose sight excitement now is making dim,
Who, watchful, even now the ball will hit
Across the net—I mean, of course, young Schmidt.
His mother in the agitation great
Caused by the hopes for her dear darling's fate,
E'en in the middle of the exciting strife,
In silence thick enough to cut with a knife,
Cries forth aloud: "My son, my son, beware!
I see a wasp a-settling on your hair."
O fateful words! Unsaid, my tale would now
Have ended in a victor's song. O how
Could gods or mortals this have heard and seen,

Without a fierce desire to intervene?
Appeals are vain! The heavens remain as brass,
And meaner mortals merely mutter: "Ass!"
Meaning Joe Schmidt, who with a dreadful cry,
Had to his head his hands uplifted high;
To frighten thence the wasp, lest left too long
It should essay to do him grievous wrong;
But when aloft his hands were high upraised,
His rival slams a ball; the table grazed,
It flies aloft in circumambient air.
Joe misses it. "Blank! blank!" he's heard to swear.
That ties the game and deuce is now the score,
An equal chance is given to Joe once more.
But he, in wrath because he'd missed the hit
That was to gain renown for him, J. Schmidt,
Now wildly strikes, and makes another miss,
And yet another, till the audience hiss
In low contempt for failures of the kind;
Until at length—ah! how can I my mind,
Or rather fingers, to these words compel,
(My writing ne'er was very good)—to tell
How the great hero when he almost grasped
The victory, was easily surpassed
By his opponent, who, I can but say,
Knew not how Ping-pong really well to play.
But, gentle reader, let us drop a veil
O'er this the saddest part of all my tale.
Suffice it that the opponent won to say;
His was the laurel crown that on that day
So many heroes both from far and near
Had sought in vain; nor hint the angry tear
That in Joe's eye did glisten, or the hate
With which, when home, his parent he did rate.
The talk he gave her gave her, too, a fright.
'Tis said her hair on that one eve turned white;
But that is not now known, for ere next day
Her hair had golden gone instead of grey!
It is not meet that I the drinks should tell
Wherewith the guests regaled themselves so well;
Nor is it proper for me to prolong,
With tales of banquets, epics on Ping-pong.
The trifle floating in its yellow cream,
And creamy ices.—which indeed did seem
As if a summer sun did on them shine,
So fast they went,—I will not sing.
'Tis time,
I think, for me to end my simple verse,
And hand it up, for better or for worse.

J.B.

M O D E R N L A N G U A G E S .

French and German are the two modern languages taught. The French course is the one followed, as a rule, from the bottom to the top of the School; and German, as a second language, is taken up at the age of 15 or 16, when specialisation begins.

Aim. These languages are taught with the object of enabling pupils to understand the spoken tongue; to speak, to write, and to read it. In addition to this, those who pass through the highest class should have a fair knowledge of the history and geography of the country, and of the development of its language and literature.

Method. The languages are treated as living speech, and are taught primarily for use rather than as a mere training subject. The methods naturally differ with the different stages of the course, and what is done in each stage will be more readily understood if divided under the four heads of vocabulary, literature, composition, and grammar,- notes and illustrations being added to indicate such methods employed as seem most worthy of remark.

1. Lower School.

Vocabulary. This is founded on simple conversation on subjects connected with the home and the classroom; simple scenes are acted. The vocabulary so learnt is kept continually fresh by means of games, of which a specimen is given.

Literature, at this stage, consists only of songs sung in class, such as "Malbrook s'en va t'en guerre," &c.

Composition is at first entirely oral,- every answer to a question being given in the form of a complete French sentence.

Grammar. The elementary accidence is made familiar by constant use, at first without explanation.

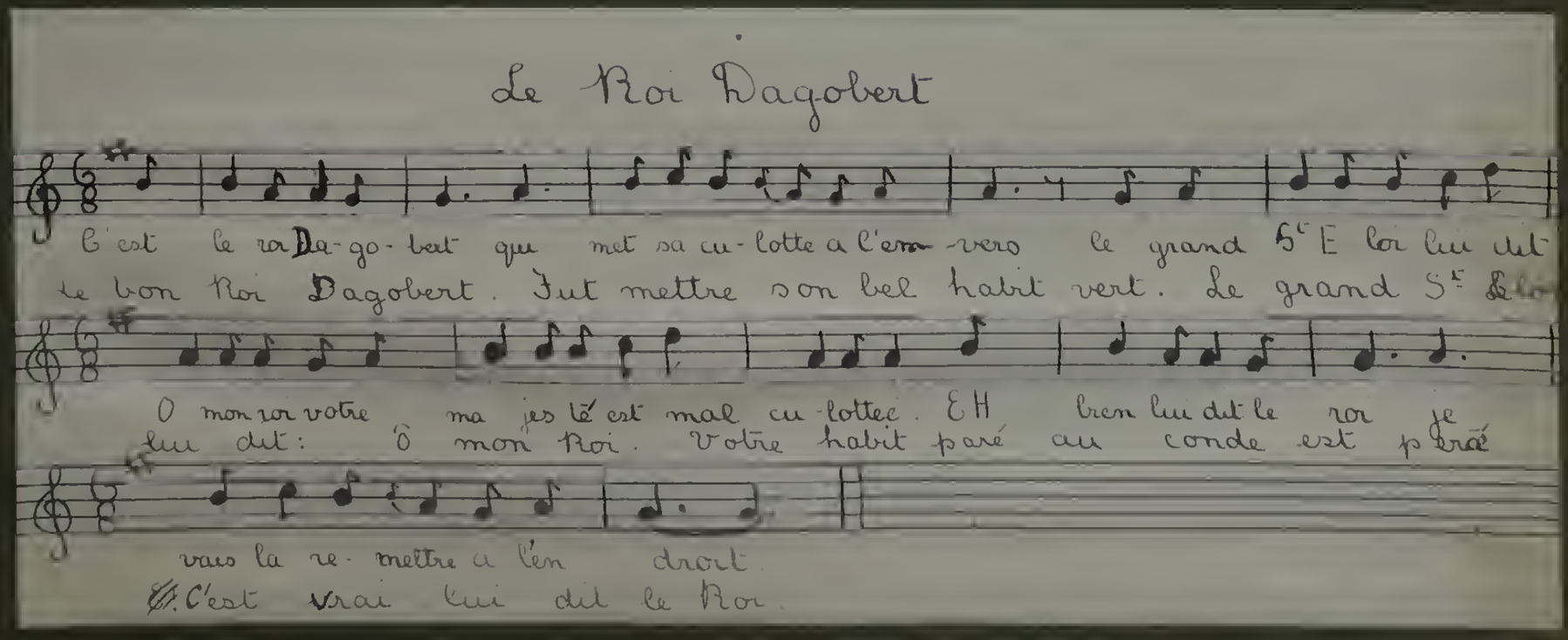
2. Lower Middle.

Vocabulary as above, but with widening range, including subjects drawn from country and town life.

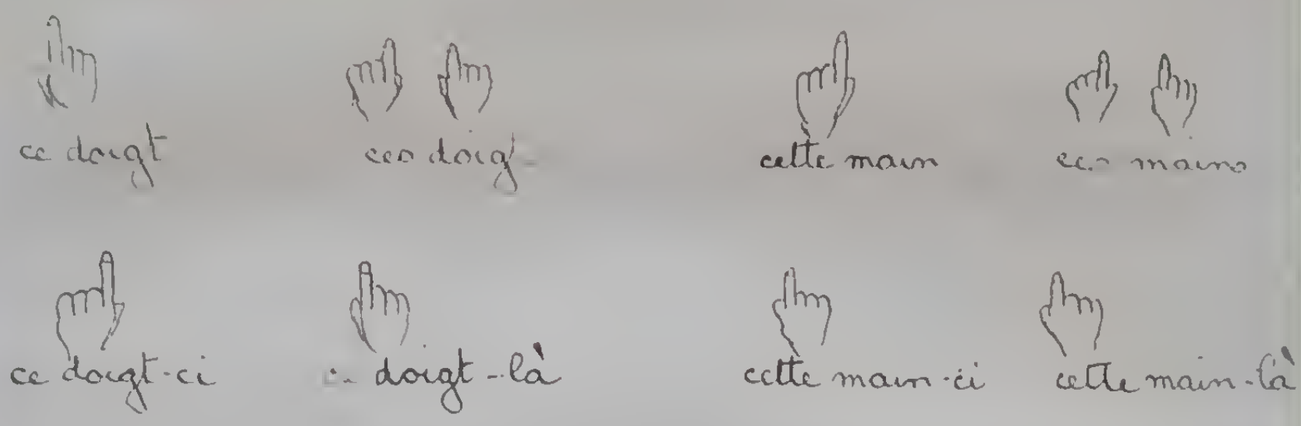
Literature. Songs are still sung in class, and afterwards written out in note-books; stories of French history are read or told, and then retold by the class.

Composition. Every answer must still be a complete sentence in French; descriptions of objects and incidents are first given orally by the class, and then written down.

Grammar now includes all the commoner tenses of the regular, and most necessary irregular, verbs, demonstrative adjectives, &c. All new points of grammar, when made familiar by constant practice, are now entered in note-books, and a complete grammar thus gradually formed.



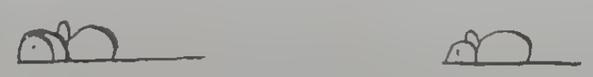
Demonstrative Adjective



ce doigt — ces doigts — cette main — ces mains

ce doigt-ci — ce doigt-là — cette main-ci — cette main-là

cet animal — ces animaux



cet animal-ci — cet animal-là

La première Personne. (au Singulier)

I Comme sujet. Je parle. Je pense, je marche, je dis je cours. Je vous déteste. Je dors.

II Comme 1er objet d'un verbe. Il me voit. Il me frappe, il me cherche. Il m'aime. Je me lave. Je me mouche.

III Comme Second objet d'un verbe. Il me donne un coup de pied. Il me serre la main. Le coiffeur me coupe les cheveux. Il me parle.

Ein Tag in Bedales — P. J. Bushill

Um sieben Uhr stehen wir auf and dann haben wir kalte Bäder und wann wir angekleidet sind laufen wir ungefähr fünf Minuten damit wir einen guten Appetit zum Frühstück bekommen. Nach dem Frühstück müssen wir wieder hinauf gehen um die Betten zu machen und dann haben wir ungefähr zehn Minuten frei bis halb-neun.

5. Upper Middle.

Vocabulary. Conversation as before, but with still wider range. Letter scenes are acted, and the game is more elaborate. Prose books that are read lists are made of useful phrases and word-groups.

Literature. Simple books are now read, and stories from French history.

Composition now includes sustained oral description, the turning of simple prose into French, and original composition and letter writing in French.

Grammar now includes all the necessary accidence and syntax, which is kept fresh by constant drill in examples.

6. Upper School.

Vocabulary as above.

Literature. A regular course of authors is now taken, and the principal phases of the history and literature studied, including the development of the language.

Composition. English prose is turned into French, and essays are written on events, books that have been read, authors studied, &c.

Grammar. A fuller study is now made, including some knowledge of historical grammar.

NOTE:-

The course as above outlined deals with French only. If German is taken from the first a similar course is followed. If taken in the Upper School only, as a second language, the course is somewhat shortened, and additional time given to it.

S P E C I M E N G A M E I N F R E N C H .

(Professeur et plusieurs élèves).

Les élèves — Nous avons pensé à quelque chose

Le Professeur — Est-ce que c'est animal, (végétal, minéral), monsieur?

A. — Oui, monsieur, c'est ~~animal~~. *minéral.*

P. — Est-ce que c'est en pierre?

E. — Non, monsieur, ce n'est pas en pierre.

P. — Est-ce en métal, (métal précieux)?

C. — Oui, monsieur, c'est en métal précieux.

P. — Est-ce que c'est grand,- (petit)?

D. — C'est petit, monsieur.

P. — Est-ce long, (carré rond), monsieur?

E. — Oui, monsieur, c'est rond.

P. — Est-ce que c'est en or,- (en argent)?

C. — C'est en argent, monsieur.

P. — Est-ce que c'est en Angleterre,- (à Londres,- à Bedales), monsieur?

E. — Oui, monsieur, c'est à Bedales.

P. — Est-ce que c'est dans cette salle de classe,- (dans une salle de classe quelconque,- sur l'escalier,- sur le corridor,- dans la bibliothèque), monsieur?

C. — Oui, monsieur, c'est dans la bibliothèque.

P. — Cette chose, est-elle entièrement en argent?

D. — Non, monsieur, elle n'est pas entièrement en argent.

P. — Est ce aussi en partie de bois, (de verre), monsieur?

C. — C'est en partie de verre, monsieur.

P. — Est-ce que c'est dans une armoire,- (dans un tiroir)?

A — Oui, c'est dans un tiroir, monsieur.

P. — Est-ce dans le tiroir où sont les choses confisquées, monsieur?

C. — Oui, monsieur c'est dans ce tiroir.

P. — Est-ce que c'est une montre qui a été confisquée, monsieur?

C. — Oui; monsieur, c'est une montre qui a été confisquée.

C L A S S I C S .

The place of classics in the general course.

However good a thorough classical training may be for those who have the natural bent and the time to give to it, (and even for these it should not begin too soon), it is out of the question for the majority. But the study of Latin forms part of our general course for all: part, that is, of the broad foundation that we think necessary for whatever line of special work may be followed later. But, at this stage,

Reasons for teaching Latin,

we regard Latin as valuable not so much for classical culture, (if the majority are ever to get this, they must get it in English, in the literature and history lessons,) as for training. Its chief value lies, that is, in the processes of grammatical analysis, translation and composition: and in the powers of observation, inference, perception and expression that they demand. For this purpose Latin is superior to a modern language from the very fact that it is more formal than our own in the rigidity of its inflections and constructions. It is a great language that has played a great part in history, and brings us into contact with a great people; and its terseness, simplicity and exactitude of expression are an admirable discipline for taste and style. For this purpose it is also superior to Greek,

and not Greek at first.

despite the inferiority of Latin literature to Greek; it is easier for the beginner as having fewer forms and simpler constructions; and it is more necessary for the intelligent study of modern languages. We therefore teach Latin to all between the ages of 11 or 12 and 15 or 16; in which time they should be able to read simple prose and verse, and to write narrative prose composition. After 15, Latin can either be given up altogether, or

Specialisation in classics possible after 15.

carried on to a more thorough study, including more difficult writers and more advanced composition in prose and verse.

At this age Greek can also be taken by those for whom a classical training seems desirable.

[Done by a Beginner after 3 weeks work.]

Dorothea Taylor aged 10

Story I.

Regina habet insulam. Piratae oppugnant insulam. Vulnerant agricolas, terrent feminas, occupant praedantdelent casas, vastant terram. Nauta videt piratas et narrat rem reginae insulae. Parat copias et oppugnat piratas. Piratae pugnant sagittis, nautae hastis. Superant piratas et liberant insulam. Regina insulae laudat nautas, et dat pecuniam agricolis. Filiae agricolarum apportant coronam

Specimens of Latin composition from different classes. By Dorothea Taylor, 10

Story X. The Capture of Rome by the Gauls.

Cum nuntii nuntiavissent Romam exercitum victum esse et consulum alterum necatum esse alterum fugisse, primo tota urbs erat plena timoris et moestitiae. Sed mox senatus convenerunt ut consulerent ~~omnium~~ saluti reipublicae. Jusserunt omnes qui poterant pugnare includi in capitolio; sed affirmaverunt ipse, qui essent senes neque possent ferre arma, mansuros esse in foro. Gallī, cum intravissent urbem invenerunt senes sedentes silentio, vestitos togis. Primo territi sunt, sed tandem appropinquaverunt, et miles tetigit longam barbam senatoris manu. Senator motus ira percussit virum ebureo baculo. Statim omnes necati sunt a Gallis.

L. M. Simson, 11.

L A T I N. A. GENERAL COURSE.

Aim. The chief value of the study of Latin lies, as has been said, in the processes of translation and composition, and the grammatical analysis required for this purpose. Our object is therefore to begin translation and composition at once, and for this purpose to keep enlarging the knowledge of

Method. forms and constructions. These are not at first learnt by heart, but by use; they are first shown in sentences on the blackboard, and their use made familiar by oral and written examples; then only are they summarised, and committed to

Grammar. memory: in this way the regular nouns and adjectives are first worked through, and prepositions and their cases; then the regular verbs, and the syntax of dependent clauses; then the commoner irregular verbs, pronouns, numerals &c. The forms, when learnt by use, are kept up by short weekly repetitions. But meanwhile from the first there has been simple continuous composition,- stories, that is, to write in Latin,- as well

Trans- lation. as the necessary exercises and translation, beginning with stories written for the purpose, through simplified versions of Caesar, or the Roman legends, up to Ovid and the simpler parts of Livy. This is at first prepared in class with the help of the teacher; later, alone; and then read aloud, and translated orally. As soon as the construction of clauses is

Compos- ition. reached, more complex composition is begun; at first on the blackboard, by the joint efforts of the class, then written out separately. About 6 hours a week are given to Latin in the upper middle School, divided equally between preparation, oral translation, grammar and exercises, and composition.

B. THE LATER COURSE.

Those who choose classics as their special subject go on after 15 or so to a more systematic study of the language; in grammar to the irregularities and niceties of scholarship; in translation to Virgil and Cicero, Horace and Tacitus, prepared or at sight; and in composition to the study of idiom and style; and in some cases to verse composition, which affords the best training for scholarly taste.

Latin. D. Jarintzoff

Quibus donis ad Darium missis, ea pars exercitus Scythici quae ad Istrum non iverat, equitibus et pedestribus acie instructis, hosti potestatem pugnandi fecit. Dum, tamen, signum pugnae expectant, forte accidit leporem subito inter duas exercitus cucurisset. Cum quod Scythae viderent magno tumultu aciebus relictis et magis clamoribus leporem insequi ceperunt. Darius cum quid causa tantorum clamorum rogavisset certior factus est hostes leporem venari. Hoc audito suis amicis conversus "Quid dubii est," inquit," hos viros re ipsa despicere et invadere nos? Nunc intellego sobryam recte de Scythis et eorum donis judicasse. Quoniam hanc opinionem de re accessi . . . .

* [illegible] dubitare [illegible] in bello non [illegible] aliquis dominari [illegible]

173 The hervii 24/7/02.

Itaque exercitum in hervios, ferocissimos bellicosissimosque viros in eis regionibus, duxit. Hi regionem perpetuis silvis tectam habitant et in media silva e liberis bonisque positis Caesarem aggressi cum sexaginta millibus virorum imparatum castra facientem, mox equitis fuderunt et duodecima septima legionibus cinctis, omnes legatos interfecerunt; nisi Caesar ipse scuto rapto per suos ut barbaros consequeretur perrupisset, et nisi decima legio quum eum in periculo vidisset a summis collibus ubi esset decucurisset et in hostium ordines perrupisset, nullus Romanus servatus esset. Sed nunc, audaci Caesaris exemplo affecti, humana majore virtute pugnaverunt et tamen summis laboribus hostes depellere non potuerunt sed sed eos se defendentes ceciderunt. Ham ex sexaginta millibus

G R E E K .

Greek is taken only after the age of 15 by those who require it for matriculation,- Greek being still demanded by Oxford and Cambridge,- or by those who now choose classics as their special study. It is, of course, treated differently in the two cases.

For matriculation.

In the first case the minimum of time is given to the subject. The same method is followed as in teaching elementary Latin, in order to get some training value from it; but at this age the steps can be taken more rapidly. The chief inflections and constructions are learnt by use in exercises and composition; and translation of simple stories and of Xenophon and of simplified versions of the dramatists leads to the books required for examination.

For classical training.

In the second case as much time is given to the subject as possible; and, as in the corresponding stage of Latin, those who make a special study of the language go on to the niceties of grammar, to regular composition in prose,- and in some cases in verse,- and the translation of Homer and Plato, the dramatists and historians.

E. C. Simon.

Story 11

ὁ λεων, καὶ ὁ ὄνος, καὶ ἡ ἀλωπηξ

Λεων, καὶ ὄνος, καὶ ἀλωπηξ ἐποιησαν κοινωνίαν· καὶ ἐβουλευσαν εὑρισκειν ἄγραν. λαβοντες δε ἄγραν, ὁ λεων ἐκελευσε τον ὄνον διελειν αὐτοις· καὶ ὁ ὄνος ἐποιησε τρεις ἴσην μεριδα. ἀλλα ὁ λεων, ἔχων πολλην ὀργην, ἐκρουσε τον ὄνον ποδι καὶ ἀπεκτενεν αὐτον. καὶ ὕπειτα ἐκελευσε την ἀλωπηκα διελειν. ἀλλα ἡ ἀλωπηξ τὴν τοῦ ὄνου μοιραν, ἐδωρευσε πασι μιαν μερίδα λιπειν οὐδεν ἑαυτῇ. ὁ λεων δε ὀργισθεις ἔφη· "τις σε βελτιστη φιλη ἐδιδαξε διελειν οὕτω." ἡ δε ἀλωπηξ ἐδηλωσε τὸ τοῦ ὄνου σῶμα.

Story 4.

ἵππος πλησιον ἀγρον μονος. ἀλλα ἔλαφος ἥκει καὶ διαφθειρει τον νομον. οὐν ἐθελει ἀπελαυνειν τον ἔλαφον. ἀλλα ἐστιν ἀδυνατος, ἔλαφος γαρ ἐστι ἰσχυρος. ἐυθεως οὐν, καὶ ἀγγελλει ἀποριαν. καὶ ὁ ἄνθρωπος χαιρει, ἔχει γαρ δολιαν μηχανην ἐν τῳ νῳ. πειθει τον ἵππον ὅτι τοῦ ἐλαφου ἀκουειν, καὶ λεγει διωξει. καὶ τότε λαμβανει ἀκοντια, καὶ ἐπιβαινει τον ἵππον. ἀλλα οὐ παρεχει ἐπιβοηθειαν, νυν γαρ ὁ ἵππος ἐστιν ἀδυνατος, καὶ δουλευει ἀπιστῳ δεσποτῃ.

[Piece done by Beginner in Greek after 3 weeks work. Ground covered – Present and Future Tenses Active of the Verb, Imperfect of two Classes of the Noun, and the Simple Adjective.]

M A T H E M A T I C S .

1. In the Lower School the teaching is mainly oral; books are not used, but questions requiring written answers are put upon the blackboard.

Arithmetic here includes numeration; place value; and the four simple and compound rules; with elementary notions of fractions, taught in the first place by the use of concrete objects. Geometry consists of the cutting out of simple figures. Special work in curve tracing by means of sewing with silk on perforated cards is illustrated on a later page, in connection with other graphical work.

2. In the Middle School, aritnmetic; plane geometry; and graphical algebra, are taken regularly in the lower classes. Mental arithmetic and oral questions are largely used to produce quickness and accuracy. Later, Algebra is formally commenced; the graphical work becomes more systematic; and a course of demonstrative plane geometry on the triangle circle, &c, helps to strengther the logical faculty. Text books are used merely as collections of examples in all but the highest class, where the use of a text book is taught as a preparation for passing into the Upper School. Finally, a course, without text books, of elementary Differential and Integral Calculus prepares the pupils for higher mathematics; and formal accuracy is encouraged by means of trigonometrical and other identities.

In the Upper School a wide range of specialisation is allowed; but progress is maintained in arithmetic, algebra, and geometry, of the ordinary school range. Many now take Differential Calculus; and all, elementary trigonometry more formally from text books; and some take Solid Geometry. Special courses are given from time to time on inequalities; theory of limits; integration; the tangencies of Apollonius, and similar subjects.

From this short statement it will be seen that, though the claims of ordinary school methods are considered, yet the course as a whole is a definite departure from any existing syllabus laid down by a Board of examiners. The scheme has grown from the results of practical experience gained under great liberty of choice; and it is an attempt to balance four factors, each of which must help to determine the methods adopted:-

1st. Whatever is taught must be interesting.
2nd. It must appeal to the imagination.
3rd. It must be logical in any development introduced.
4th. So far as possible, it must be up to date,- i.e., it must attempt to provide the most powerful intellectual technique yet devised.

Ordinary school mathematical work has not been revised with regard to these factors. The system here adopted has been built upon Coordinate Geometry, taught in the beginning as Graphical Algebra,- for a further and more detailed treatment of which see p. [illegible] onwards.

2. One man mows $\frac{1}{2}$ of a field in a day, another mows $\frac{1}{3}$ in the same time.
In what time would they mow together mow the whole?

$\frac{3}{5}$ in a day $\quad \frac{1}{5}$ $\quad \frac{1}{2}+\frac{1}{3} \quad \frac{3+2}{6} = \frac{5}{6}$

$\frac{3}{5} \times \frac{1}{3} \cdot \frac{1}{5}$ $\quad \frac{5}{6}$ in one day

$\therefore \frac{1}{6}$ in $\frac{1}{5}$ of a day.

$\frac{6}{5}$ = days = $1\frac{1}{5}$. $\quad \therefore \frac{6}{6} = 1$ in $\frac{6}{5}$ days

---

3. What fraction falls short of $\frac{7}{12}$ by $\frac{5}{20}$.

$\frac{7}{12} - \frac{5}{20} \quad \frac{35-9}{60} = \frac{26}{60} = \frac{13}{30}$.

---

4. Of what fraction is $10\frac{14}{15}$ the 10^{th} part.

$\frac{164}{3} \times \frac{2}{1} = \frac{328}{3} = 109\frac{1}{3}$

Eighth Book. (14.)

Algebra. Exercise XIV.

5) (con). Let x = the smaller integer.
Then $x+1$ = the greater integer.
Then $\frac{x}{4} + \frac{x}{11} = \frac{x+11}{5} + \frac{x+1}{9} + 1$.
Then $495x + 180x = 396x + 396 + 220x + 220 + 1980$
Then $675x = 616x + 2590$
Subtract $616x$ from each side.
$59x = 2596$
$x = 44$ the other number = 45. R
Proof $11 + 4 = 9 + 5 + 1 = 15$.

9) Let x = A's age now.
$x - 9$ = B's age now.
$x + 10 = 2(x - 19)$
$x + 10 = 2x - 38$
$x - 38 = 10$
$x = 48$
A is 48 years old now
B is 39 " " " R.
Proof $58 = 29 \cdot 2 = 58$

H. M. Gimson (13)

13) In any A P of $2n$ terms show that $\frac{S_n \text{ odd } n \text{ terms}}{S_n \text{ even terms}} = \frac{n^{th} \text{ term}}{(n+1)^{th} \text{ term}}$

Let $S_{2n} = a + (a+d) + (a+2d) + (a+3d) + (a+4d) + \cdots (a+2n-1)d$

Then the odd terms are $a + (a+2d) + (a+4d) + (a+6d) + \cdots$ to n terms

And the even terms are $(a+d) + (a+3d) + (a+5d) + \cdots$ to n terms.

n^{th} term : $a + (n-1)d$

$(n+1)^{th}$ term : $a + nd$

$S_n = a + (a+2d) + (a+4d) + (a+6d) + \cdots \{a + (n-1)2d\}$

$\alpha = 2d \quad a = a.$

$S_n = \frac{1}{2}n\{2a + (n-1)2d\}.$

$S_{n_1} = (a+d) + (a+3d) + (a+5d) + (a+7d) + \cdots \{a+d + (n-1)2d\}$

$D = 2d. \quad a' = (a+d)$

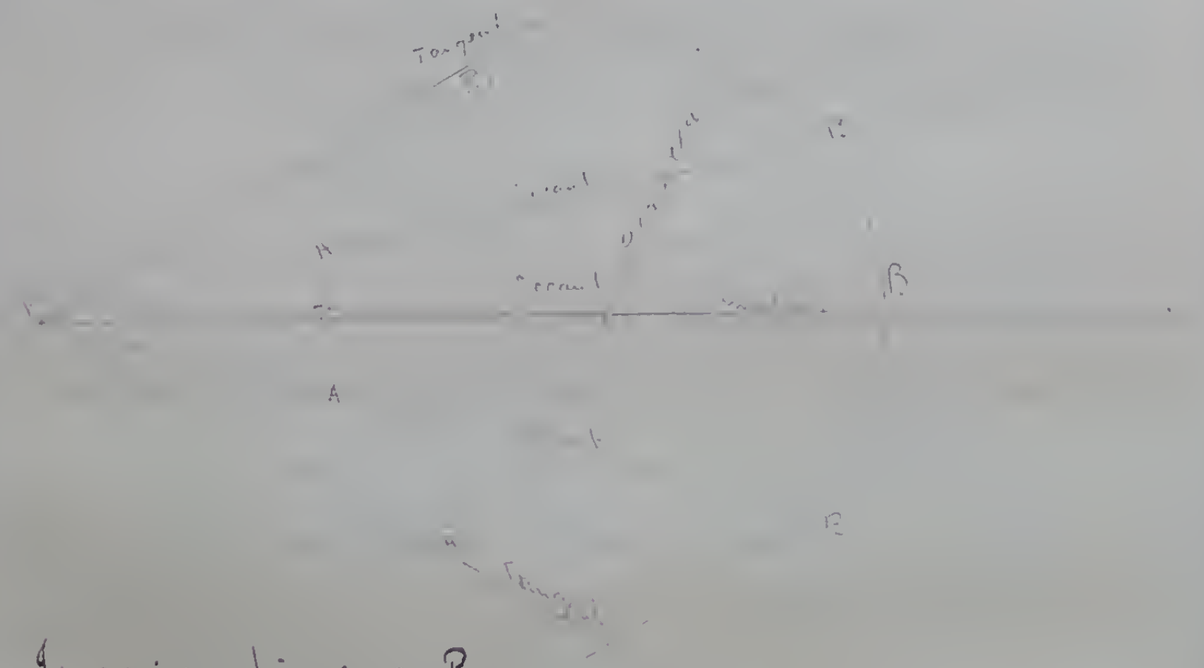
$\therefore S_{n_1} = \frac{1}{2}n\{2(a+d) + (n-1)2d\}$

$\therefore \frac{S_n}{S_{n_1}} = \frac{\frac{1}{2}n\{2a + (n-1)2d\}}{\frac{1}{2}n\{2(a+d) + (n-1)2d\}} = \frac{a + (n-1)d}{a + nd}$ Q.E.D

$\frac{2a + 2dn - 2d}{2a + 2d + 2dn - 2d} = \frac{\{a + (n-1)d\}}{\{a + nd\}} = \frac{a + (n-1)d}{a + nd}$

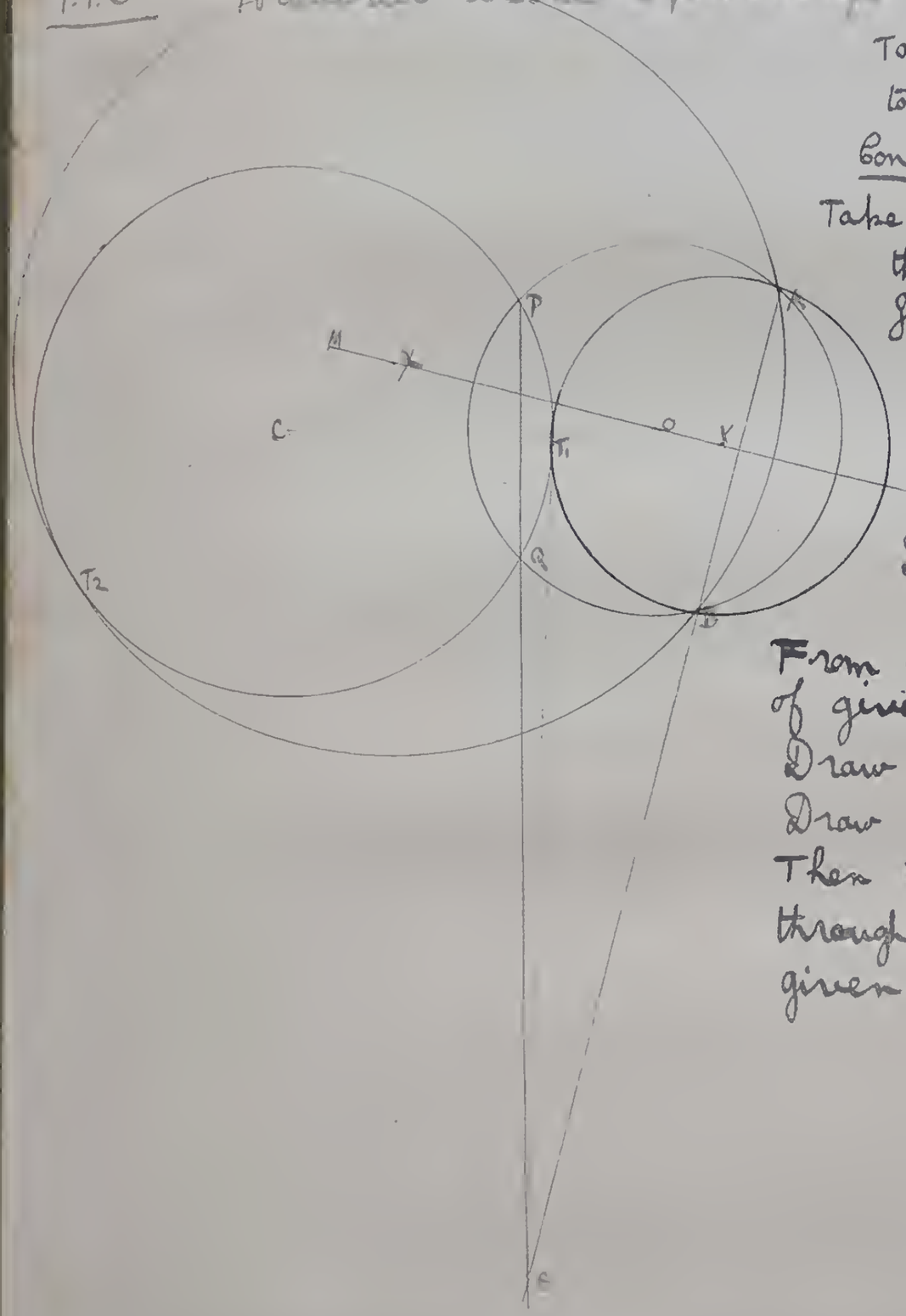
A straight line which cuts a circle is called a Secant.

A straight line cannot cut a circle in more than two places.



Imagine a hinge at P.
Let P.A.B. turn on this hinge until A and B meet.
This limiting position of the secant is called a Tangent.
Two Tangents can be drawn to a circle from any point.

P.P.C To describe a circle to pass through two points and to touch a circle.



To pass a circle through A & B which shall touch the circle PQ T_2.

Construction. Join AB & bisect it at rt ∠s to RM.
Take O any point on RM & describe a ⊙ to pass through A & B & to cut the given ⊙ at P & Q.
Join PQ & produce.
Produce AB to cut PQ produced at S.
In Fig II draw Q'S' equal to QS in Fig I
In Fig II draw P'S' equal to PS in Fig I.
Bisect Q'P' at M & describe semi ⊙ Q'T'P'
Draw T'S' to meet circumference at T' & also to be at rt ∠ to Q'P'.
From S mark T_1 & T_2 on circumference of given ⊙ equal to S'T'.
Draw a ⊙ to pass through A, B, & T_1.
Draw a ⊙ to pass through A, B & T_2.
Then these two ⊙ are those required to pass through two given points & to touch a given ⊙.

GRAPHICAL ALGEBRA.

Functions are taken, simple at first, more complex later: and a table of values connecting x and y calculated by means of Arithmetic. Each pair of values determines one point, and a series of pairs calculated from the same function determines a straight line or curve. At first $y = x$ is plotted by means of the table:-

x 0, ·1, ·2, ·3, ---- 1·0, 3·0; -2·5 &c.

y 0, ·1, ·2, ·3, ---- 1·0, 3·0; -2·5 &c.

The effect of varying the different elements of a function can be shown by taking the following series of functions:-

I. $y = x$
$y = 2x$
$y = 3x$
$y = 4x$
$y = \frac{1}{2}x$

II. $y = x$
$y = x + 1$
$y = x + 2$
$y = x - 1$
$y = x - 2{\cdot}5$

III. $y = x^2$
$y = x^3$

IV. $y = +x$
$y = -x$

V. $y = +x^2$
$y = -x^2$

VI. $y = x^2$
$y = x^2 + 1$
$y = x^2 - 2$

VII. $y = x^2 - 3x + 2$
$y = x^2 + x + 1$
$y = x^2 - x + 1$
$y = x(x - 1)$.

The Series I illustrates the meaning of coefficient.

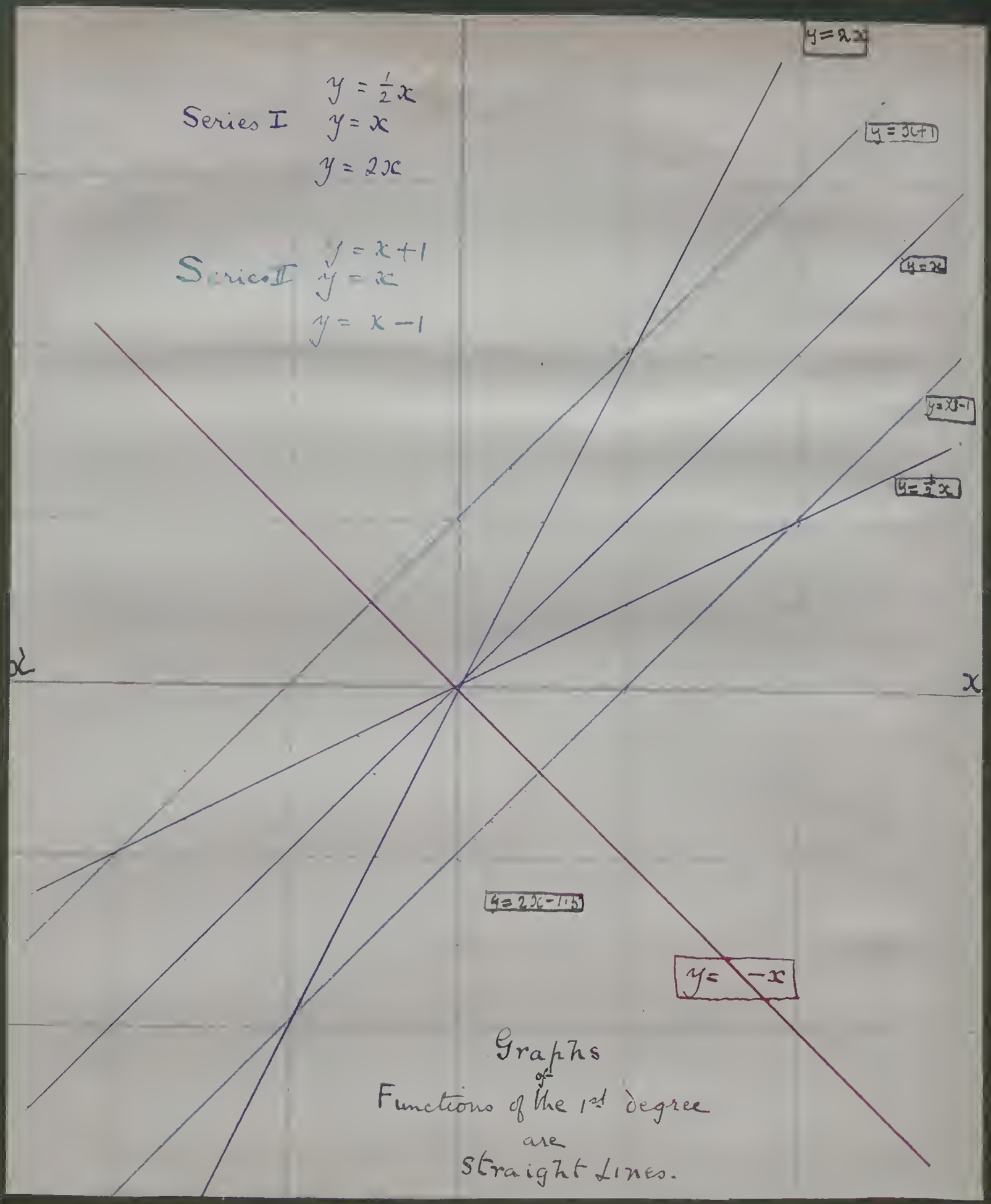
" " II " " " " " an absolute term.

" " III " " " " " index.

" " IV and V illustrate the meaning of change of sign,

and so on.

The pupils as a rule show no lack of interest in the work, and have now laid a foundation upon which a knowledge of more advanced subjects can be built up. When the coefficients of Series I are the trigonometrical tangents of the angles made by the straight lines with the axis of X; it is easy then to introduce Trigonometry, and to plot the circular functions $y = \sin x$, $y = \cos x$, $y = \tan x$, &c, whenever it is thought desirable.



Graphs
of
Functions of the 1st degree
are
Straight Lines.

The illustration given above is a specimen of the work of pupils 11-13 years of age. The photograph shows this similar work on the blackboard can be taken with your own children. [illegible] 11-13 years old

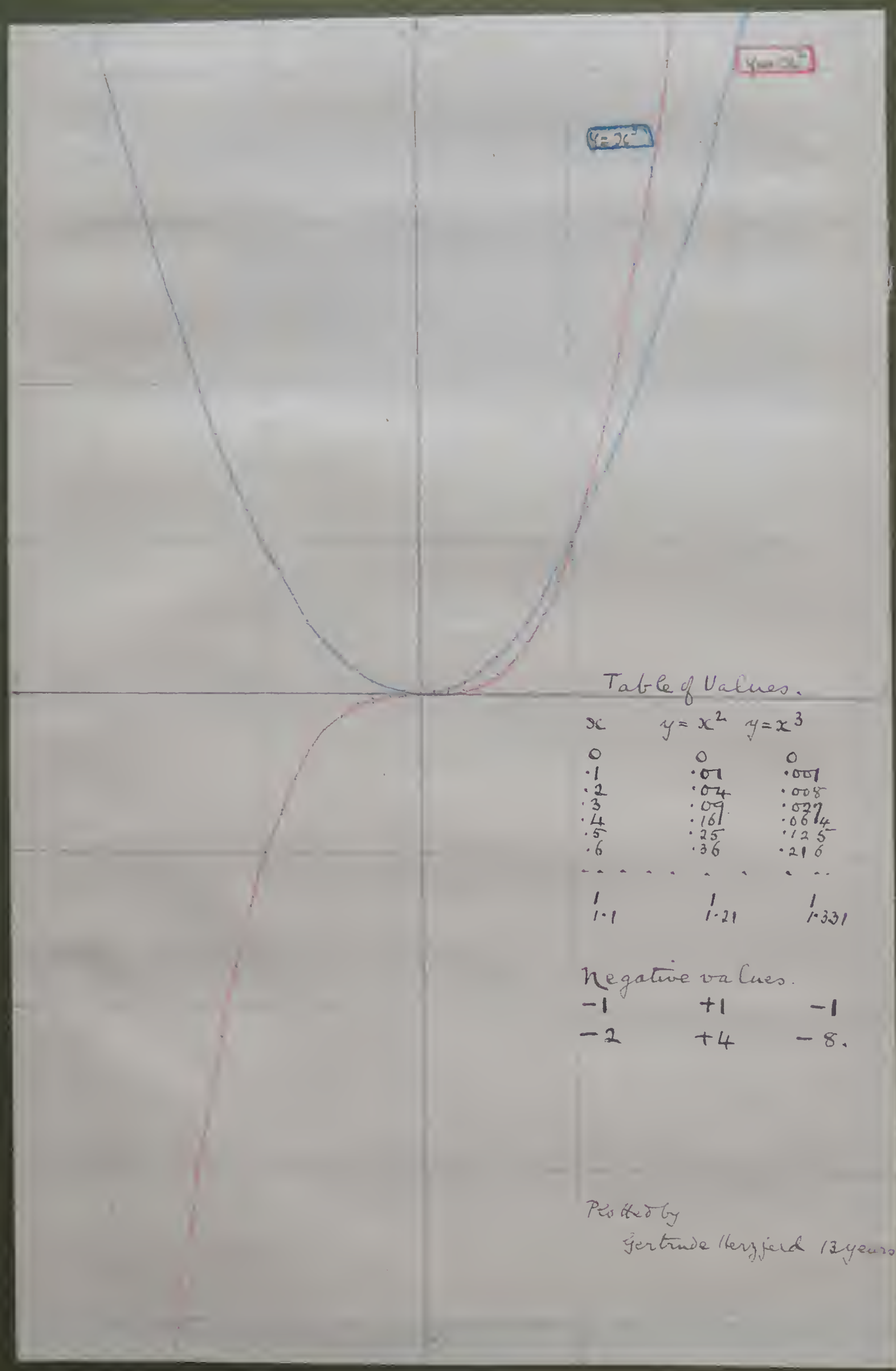


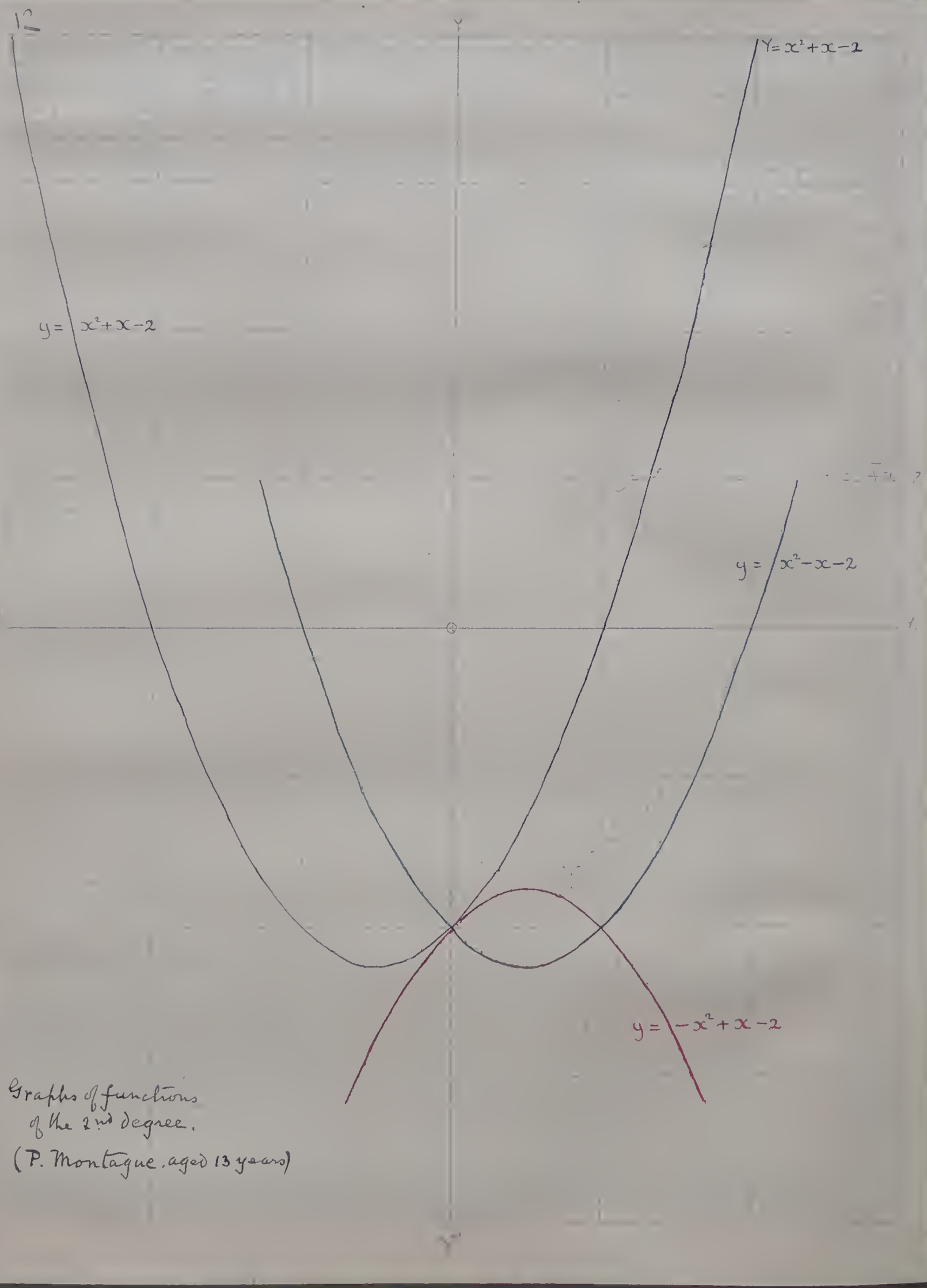
Table of Values.

x	$y=x^2$	$y=x^3$
0	0	0
·1	·01	·001
·2	·04	·008
·3	·09	·027
·4	·16	·064
·5	·25	·125
·6	·36	·216
1	1	1
1·1	1·21	1·331

Negative values.

−1	+1	−1
−2	+4	−8.

Plotted by
Gertrude Herzfeld 13 years



Graphs of functions
of the 2nd degree.
(P. Montague, aged 13 years)

In one of the lines previously laid down, the system must, if possible, include the most powerful intellectual technique yet devised." It may now be taken for granted that such technique is to be found only in the Differential and Integral Calculus: and the further development of curve tracing is determined by the need of some work preparatory to formal Calculus. By the method of limits, the limiting value of the ratio of the increments of y and x can be calculated for any particular function; the accuracy of the work can be tested by using the curves already drawn as material upon which to draw geometrical tangents.

Tangents to any curve are drawn by connecting a given pt on the curve to a pt. on the axis of X found by calculation.

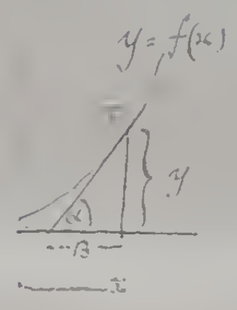
If $y = f(x)$

$\frac{dy}{dx} = f'(x) = \tan\alpha$

and $\tan\alpha = \frac{\text{Perp}}{\text{Base}} = \frac{y}{\beta}$.

$\therefore f'(x) = \frac{y}{\beta}$

and $\beta = \frac{y}{f'(x)}$



$y = x^2(x-1)$

$y = x(x-2)^3$

$y = x(x-2)^2$

135° 54' (by tables
134° 30' (by measurement)

Curves given by
Functions of the 3rd and 4th degree.
Afterwards used for drawing
Geometrical tangents, to
illustrate and verify the
Differential Calculus.

(F. R. Monks aged 17 years)

Trigonometry and Mathematical Tables can also be introduced: and logarithms can be illustrated by curves like:-

$y = \log_{10} x$ ..... The Curve of Common Logarithms.

$y = e^x$ ..... The Curve of Compound Interest.

(See illustration below).

$y = e^x$

$$\frac{dy}{dx} = \underset{\text{Inc } x=0}{L} \frac{\text{Increment of } y}{\text{Increment of } x} = \underset{h=0}{L} \frac{e^{x+h} - e^x}{h}$$

$$= \underset{h=0}{L} \frac{e^x(e^h - 1)}{h} = e^x \underset{h=0}{L} \frac{e^h - 1}{h}$$

$$= e^x \log_e e = e^x \times 1 = e^x$$

By definition of tangent α in Trigonometry

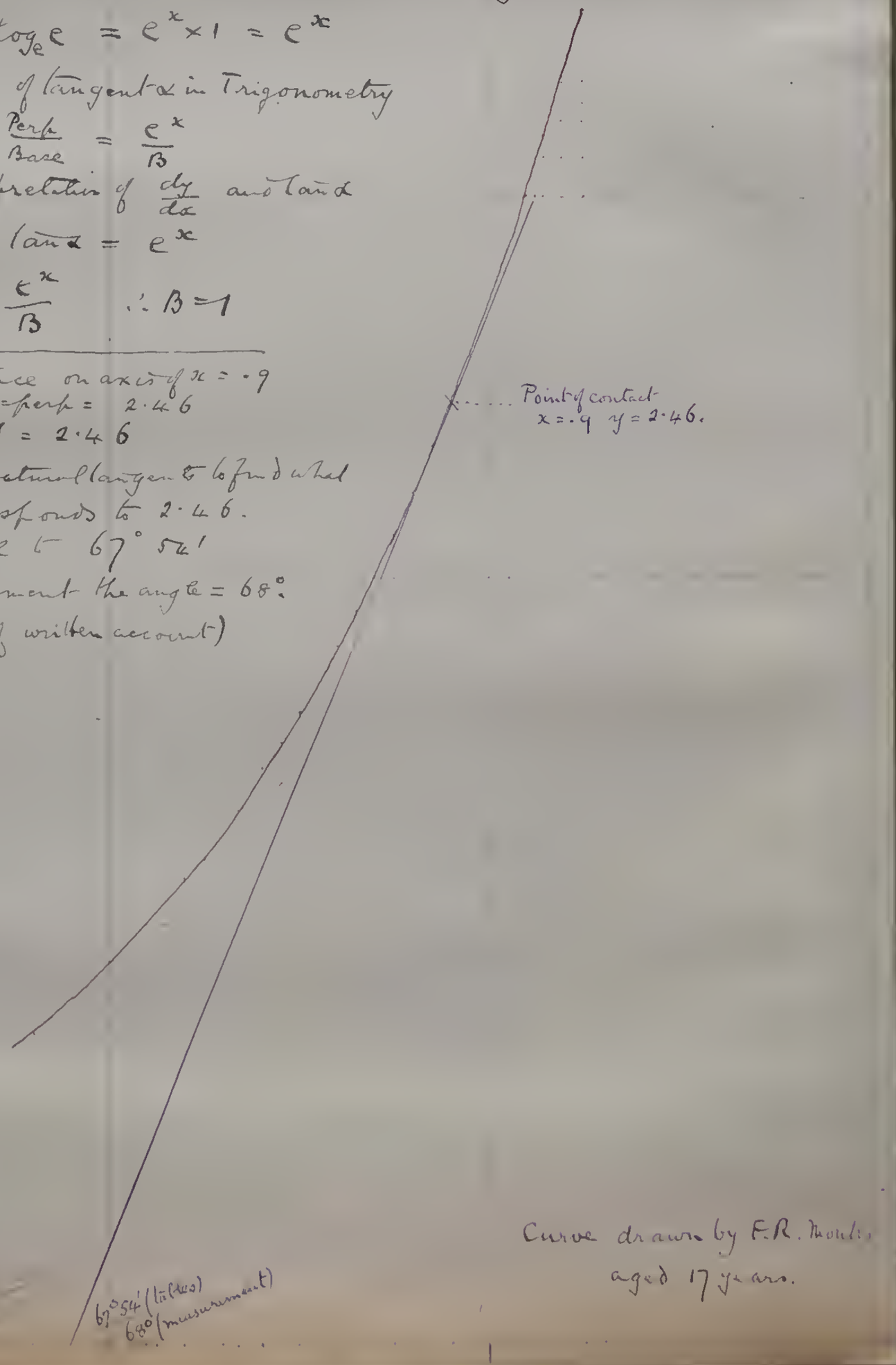
$$\tan\alpha = \frac{\text{Perp}}{\text{Base}} = \frac{e^x}{B}$$

By the interpretation of $\frac{dy}{dx}$ and $\tan\alpha$

$$\frac{dy}{dx} = \tan\alpha = e^x$$

$$\therefore e^x = \frac{e^x}{B} \qquad \therefore B = 1$$

Take distance on axis of $x = \cdot 9$
value of y = perp = 2·46
$\tan\alpha = e^{\cdot 9} = 2 \cdot 46$
Look up in natural tangents to find what angle corresponds to 2·46.
It is equal to 67° 54'
By measurement the angle = 68°.
(Copy of written account)



Curve drawn by F.R. Moulton aged 17 years.

The Circular functions

$y = \sin x$
$y = \cos x$
$y = \tan x$
$y = \sec x$.

sec x

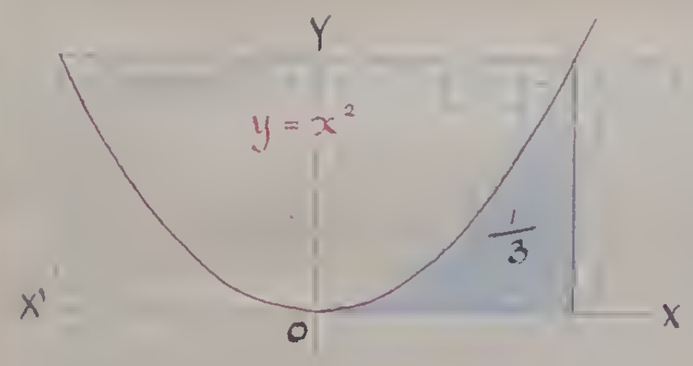
tan x

sin x

cos x

Nos 5, 6, 7. Examples for 1s.
sin x, cos x, tan x, sec x.

J. W. Bachhouse 17 Jean



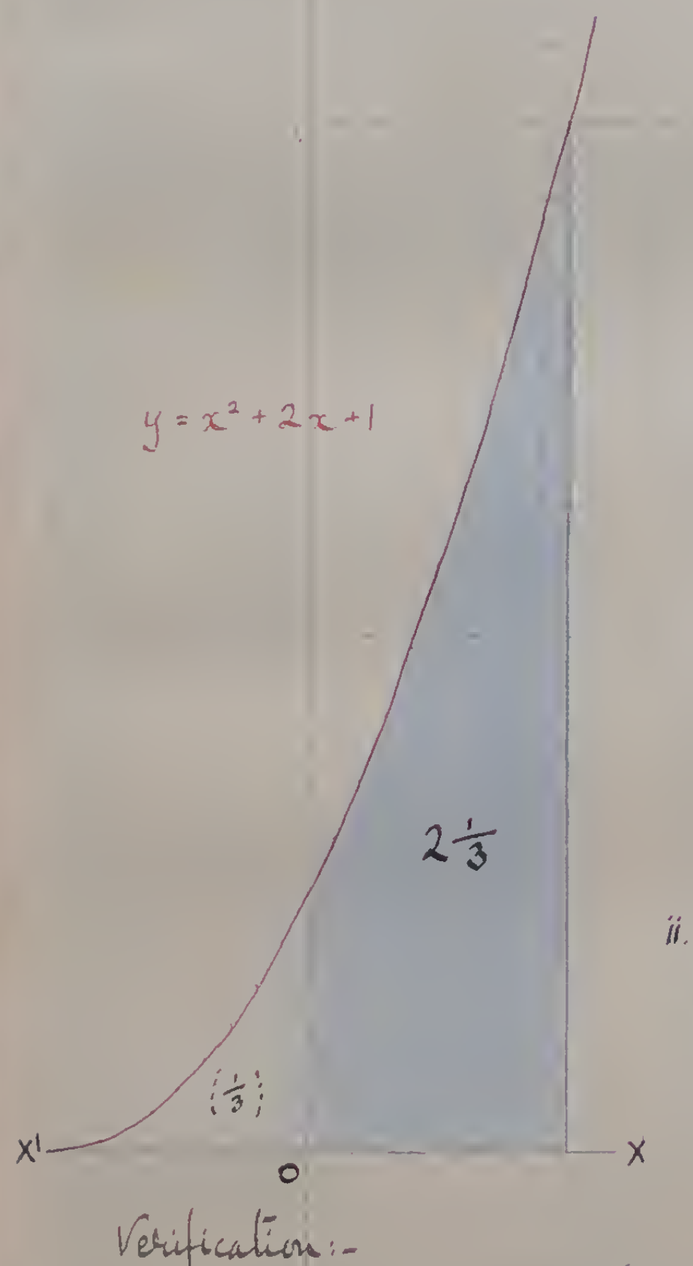
To find the Area bounded by the curve, $y = x^2$

Treating it as a 1st derived curve.

If $y = x^2$, then $\int x^2 dx = \frac{1}{3}x^3 + A$

Then, when A = 0

If $x = 1$. Area = $\frac{1}{3}$ of 1 square unit.
If $x = 2$. Area = $\frac{1}{3}$ of 8 square units.
If $x = 3$. Area = $\frac{1}{3}$ of 27 square units.



Given, $y = x^2 + 2x + 1$

i. To find the turning point and so plot in the curve

Differentiate, and put the result = 0.

$$\frac{dy}{dx} = 2x + 2$$
$$2x + 2 = 0$$
$$\therefore 2x = -2$$
$$\therefore x = -1$$

Substitute this value for x in the original equation, and solve for y.

$$y = 1 - 2 + 1$$
$$\therefore y = 0$$

From these two results we get the turning point.

$\therefore$ Turning point = $x = -1, y = 0$.

ii. To find the area between the axes of x and y, the perpendicular through $x = +1$, and the curve.

The area is given by $\int dy = \int (x^2 + 2x + 1) dx$.

$$\therefore y = \frac{1}{3}x^3 + \frac{2}{2}x^2 + x + A$$

Put A = 0, $x = 1$, $y_1 = \frac{1}{3} + 1 + 1 = 2\frac{1}{3}$ sq. units.

Verification:-

$\frac{1}{3} + 2\frac{1}{3} = 2\frac{2}{3}$

$2\frac{2}{3} = \frac{1}{3}$ of 8.

This illustration shows that elementary work involving Differential and Integral Calculus is well within the power of young pupils. It is however necessary to prepare the way; and the 2 last pages indicate in particular work of a preparatory kind.

This is the work of H. M. Gimson (aged 13 years).

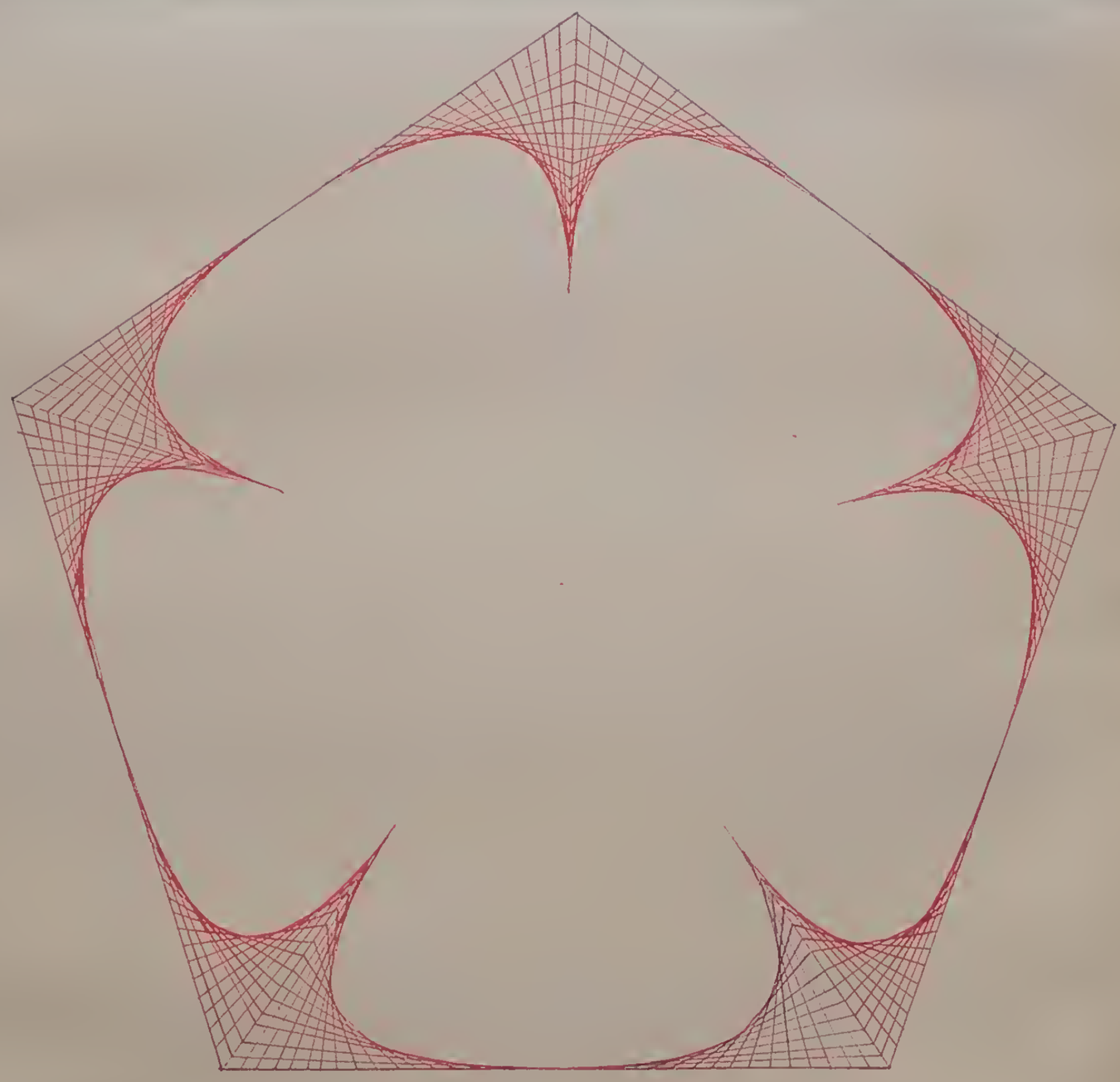
"ork preparatory to the Differential Calculus.

"nvelope" to Curves.

The function $y = x^2$ traced by means of Tangents.

by. Brother in 16 years.

An attempt has recently been made to arrange the work of the Junior forms and of the Preparatory School, so as to make part of it a foundation for curve tracing and the methods of the Calculus in the Upper forms. The illustration below is a copy in ink of an original worked in red silk by Rollo Scott (nearly 6 years in age); the design is based on a rose, and is executed by drawing straight lines in regular succession. No curved line of any description is required after the construction of the original pentagon. Children 9-12 years in age design as well as execute work based on thistle leaves &c.



The original worked (but not designed)
in silk by Rollo Scott (age nearly 6 years).

E L E M E N T A R Y S C I E N C E .

Aim. The aim of the science teaching in the lower part of the school is to awaken the children's interest in what is going on around them; to inculcate careful and sustained observation; and to set them thinking by bringing to their notice some of the fundamental facts in Nature. This is done in the class room, in the school garden, and by means of excursions in the neighbourhood. The present section will deal only with work done in the class room.

Course. The course of work includes the taking of weather readings of all kinds; elementary physics; chemistry; geology; botany; and hygiene. But no attempt is made to draw any hard and fast line between the branches, and the child gives the name Science to whatever he is doing. The knowledge is gained as far as possible at first hand, as the result of experiments; and though many questions have to be left unanswered, curiosity is stimulated, and there is left a desire to go further. Books are almost entirely unused in this work,- the object being, not to cram the child's mind with facts, but to stimulate him to the desire to find out for himself.

Observations of the weather, &c. Every day three or four of the younger children, chosen in rotation, read the height of the barometer and thermometer, examine the rain-gauge, count up the hours of sunshine of the previous day, record the direction of the wind, the phase of the moon, where the sun rises and sets, and the length of the shadow cast at 12 o'clock,- calculating from this the height of the sun above the horizon. All these records are usually summarised every month in a calendar. This work forms the basis of the whole science teaching. Here the child learns to observe accurately, and record his observations, and gradually stores up knowledge from first hand experience. And, more important still, curiosity and interest are awakened, and he begins to think and to ask questions:- Why does the wind change; what causes the barometer to rise?- and so on. This makes the class teaching at once easier and more effective.

Record of hours of Sunshine

(1 sq = 1 hour)

Edyth Peach
age 14 yrs

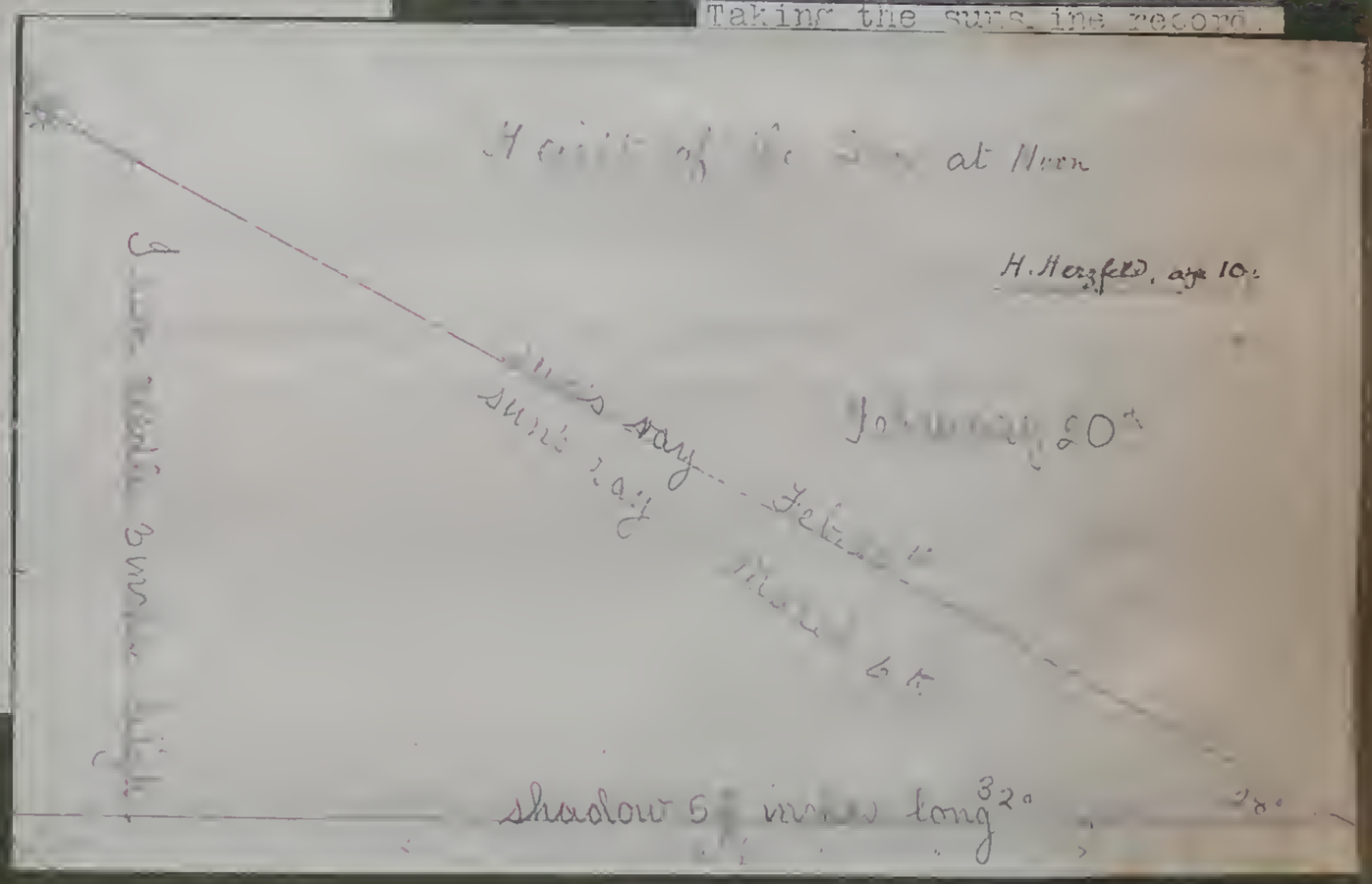
FEB

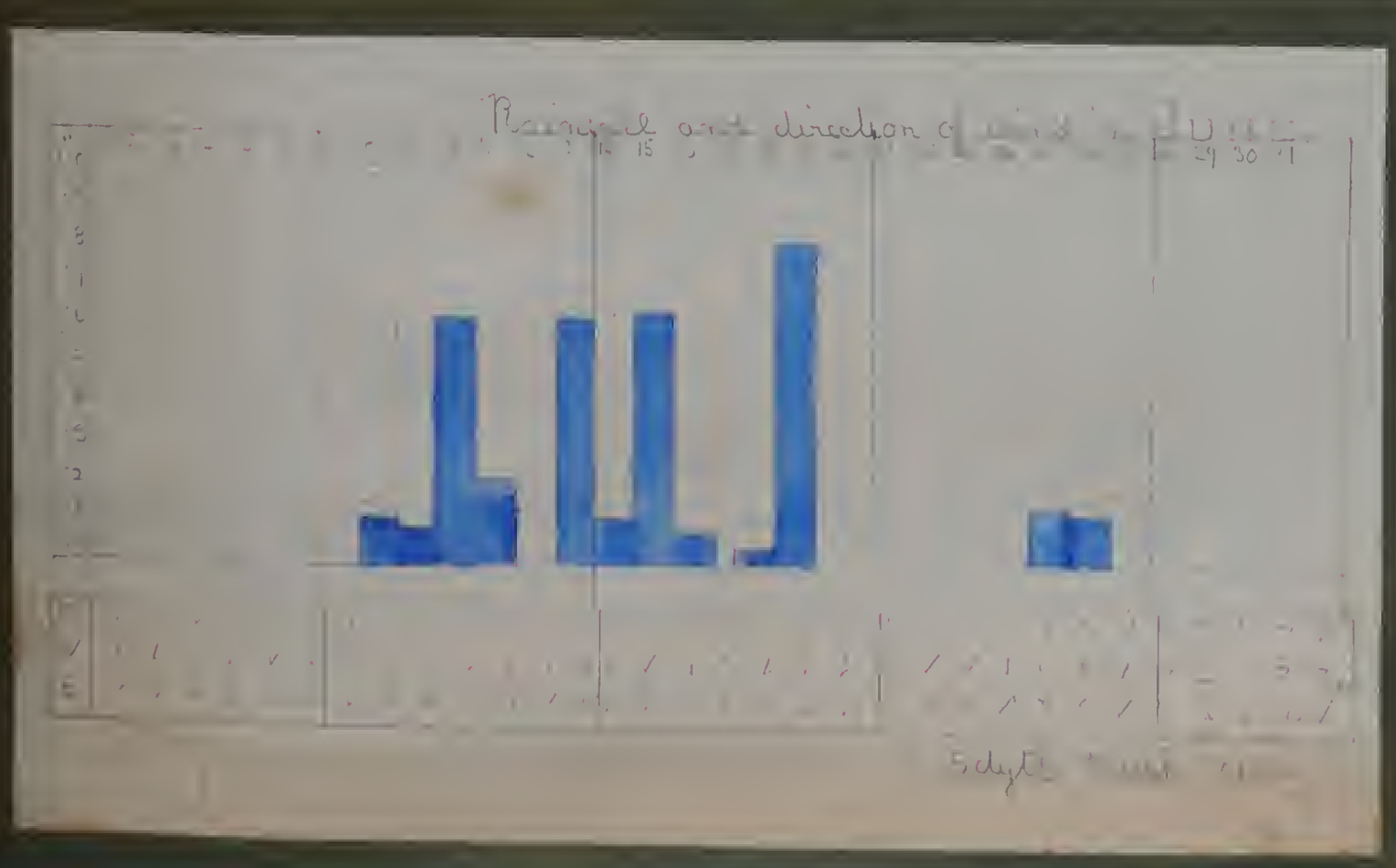
Total number of hours
65 Hours

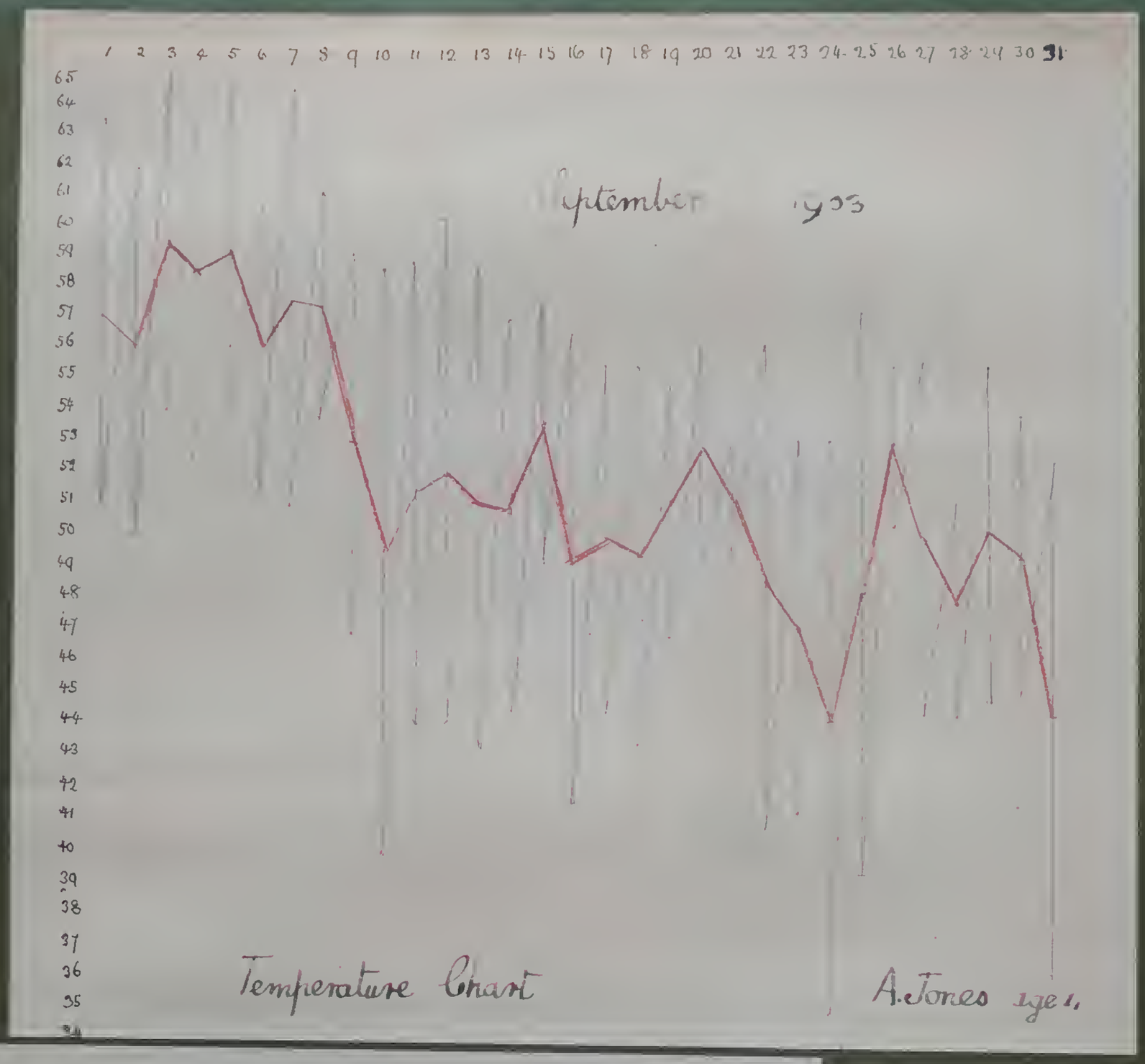
JULY

Total number of hours
236

Taking the sunshine record.

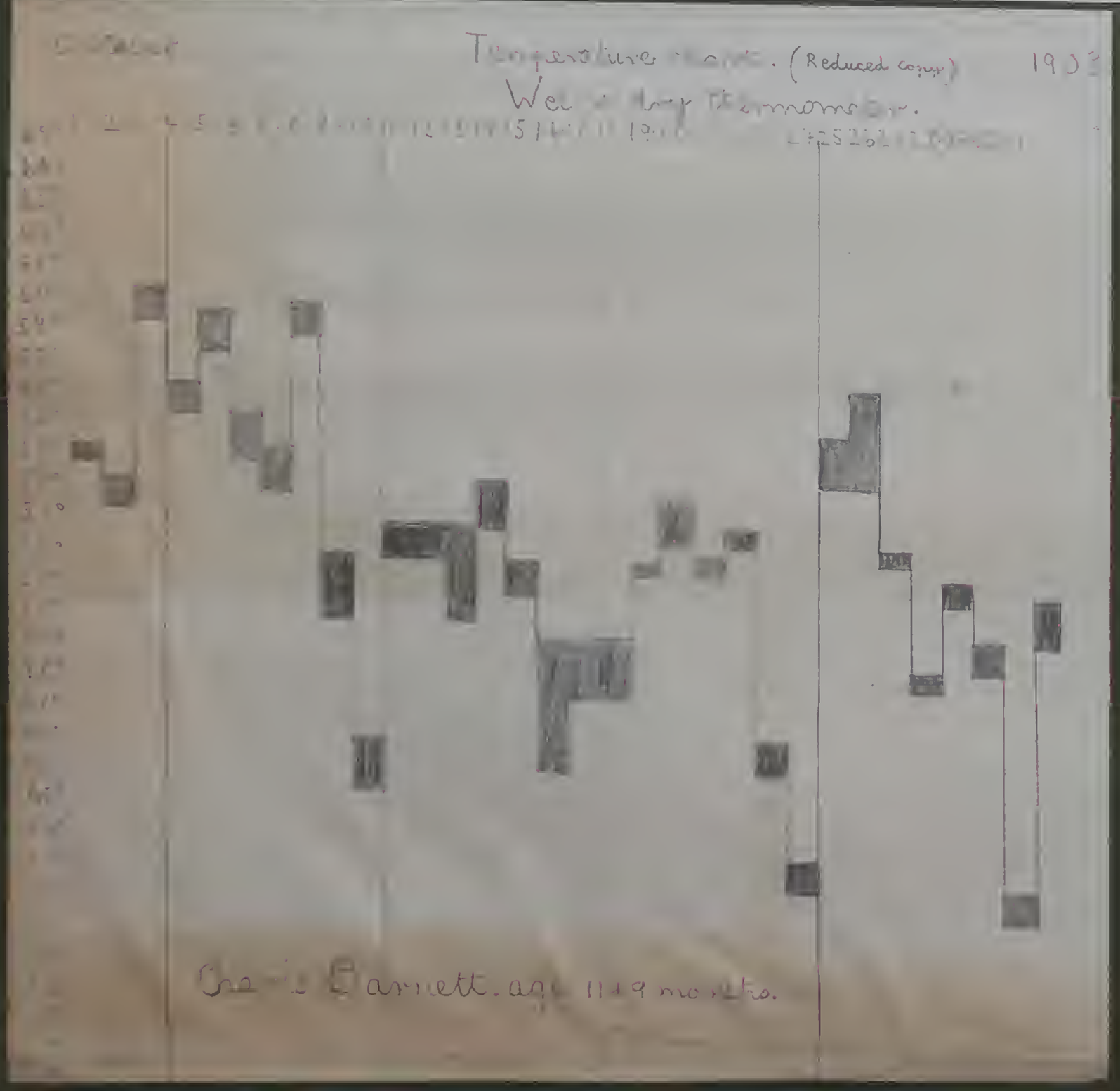






Temperature Chart

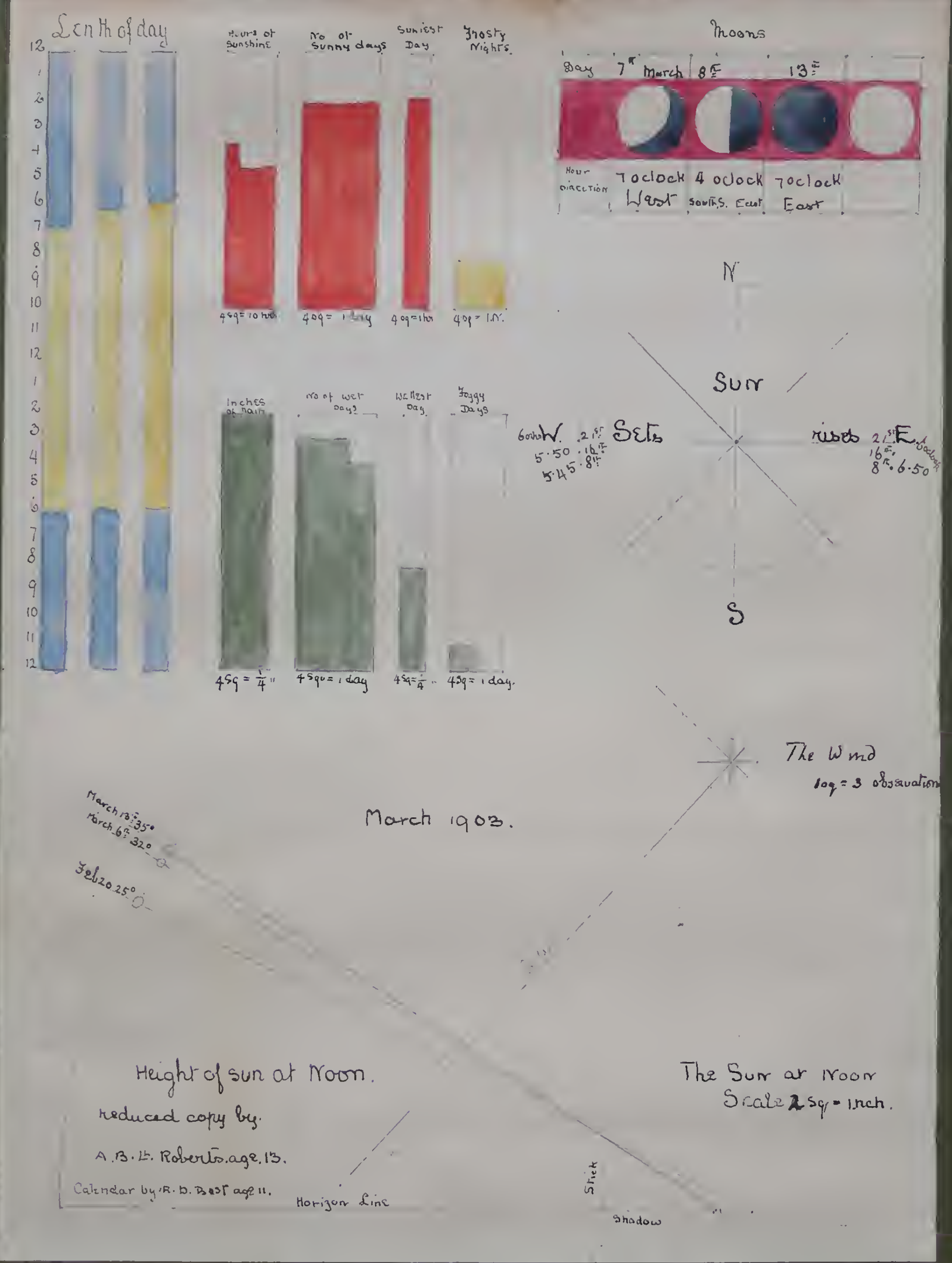
A. Jones age 11.



Temperature chart. (Reduced copy) 1903

Wet & dry Thermometer.

Chas Barnett. age 11 9 months.



SUN.

RISES			SETS	
Direction	time	Date	time	direction
E.S.E.	7·30 am	Feb 20th	5·0 pm	W.S.W.
E. by S	6·50 am	Mar 8th	5·45 pm	W by S
" " "	6·6 am	Mar 16th	5·50 pm	" " "
E	6·0 am	Mar 21st	6·0 pm	W

Observations of the moon.

1903.

Month	Week	Day & hour	Direction	Form
	1	1st 7 p.m.	W.	☽
March	2	7th 7·20 p.m.	S.S.E.	◗
	3	13th 7·15 p.m.	E	●

ELEMENTARY PHYSICS.

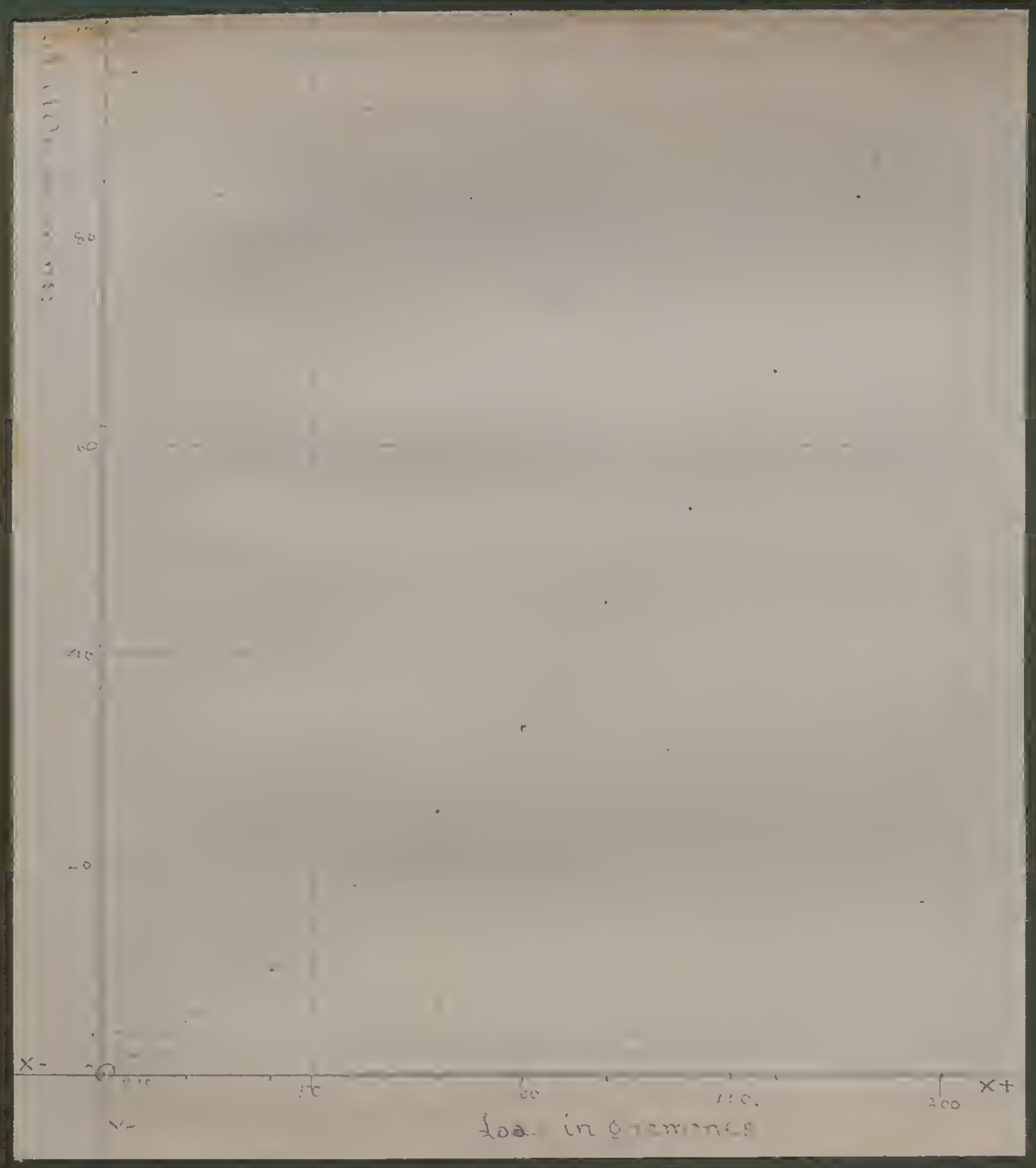
In this work the child is taught to measure carefully area and volume by daily observations, such as those already mentioned. He also learns the use of plumb line and level, and the principle of the lever. He finds out by experiment that all pendulums of the same length - whatever their material - vibrate at the same rate; but the shorter ones vibrate more rapidly: that an elastic substance stretches more and more as the force pulling it is increased. He notices the variation in the density of substances, and investigates the working of a pump. He finds out for himself that sound is caused by vibration: that light is reflected and refracted according to some definite law; and that heated bodies in general expand. He maps out the lines of force of a magnet; finds that an electric current generates heat; and that a coil in which a current flows becomes a magnet.

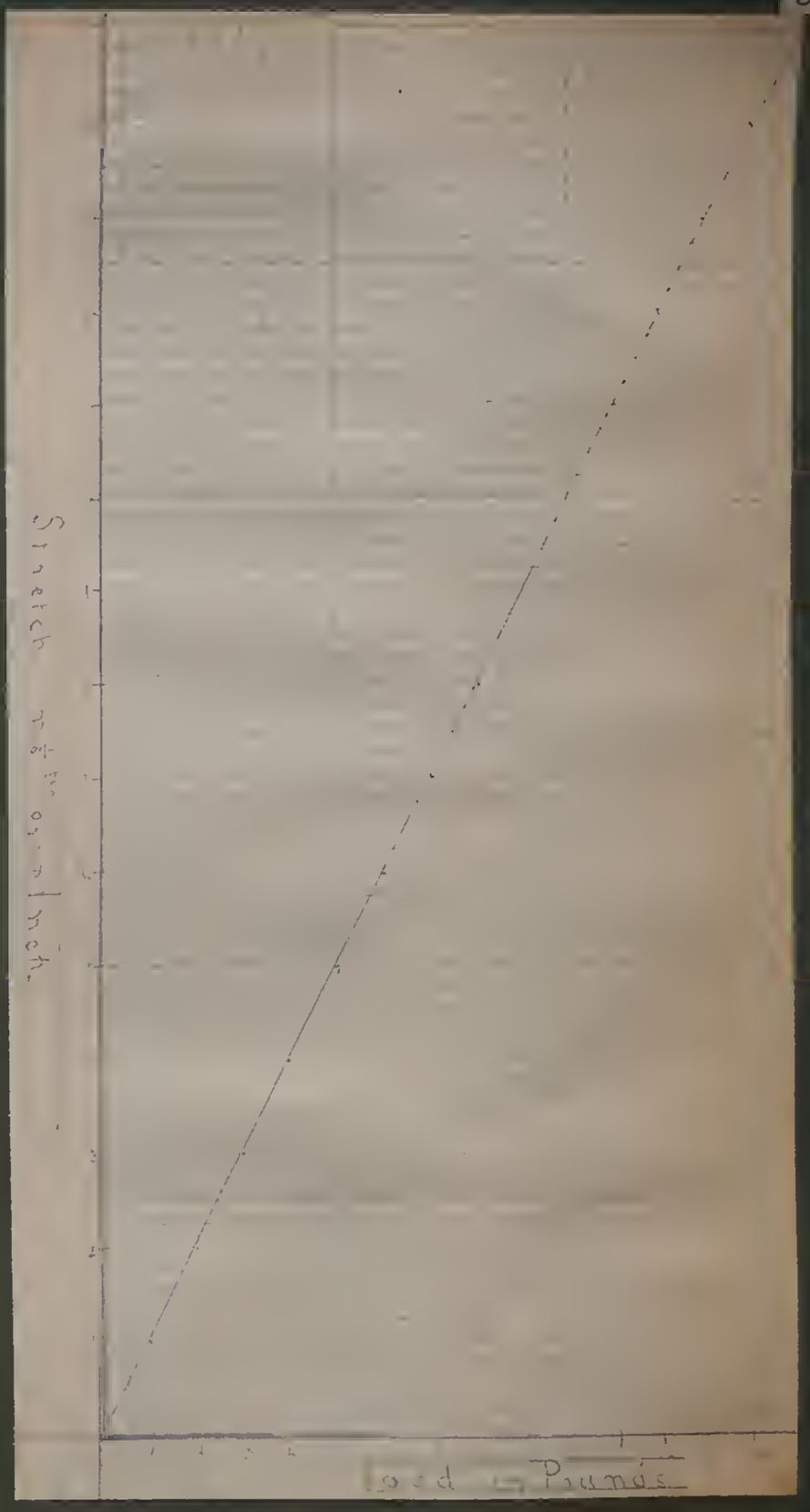
Two illustrations of the work done are here given:-

1. Two experiments on elasticity, to find out the relationship between the stretch of an elastic body and the load stretching it.

a. The lid of a cocoa tin was attached to a piece of elastic, and hung from a nail; weights were then added, and the stretch of the elastic measured with a ruler. The numbers obtained were carefully recorded. The curve thus obtained is given opposite. From this the conclusion was reached that elastic does not stretch evenly. It was also found that the elastic returned to its original length after being released. Some of the class found that it did not recover its original length at once, but had done so by the following day.

A similar experiment was conducted with a spring. The result reached is given on the opposite page. The conclusion was reached that the stretch of a spring is proportional to the load.





Stephen. W. Coffin. Elasticity of Class. II To I.
Ex-13 Elastic. November 10th: 1903. Winter Term.

Load. in grammes.	Distance between marks. in m.ms:	Stretch. in m.ms:	
20. grammes	115. - 110.	5. m.ms:	
40. "	120. - 110.	10. "	
60. "	128. - 110.	18. "	no strain. producing permanent set.
80. "	135. - 110.	25. "	
100. "	143. - 110.	33. "	
120. "	153. - 110.	43. "	no strain. etc:
140. "	164. - 110.	54. "	
160. "	177. - 110.	67. "	
180. "	194. - 110.	84. "	
200. "	210. - 110.	100. "	no strain. etc.

G. Hubbuck.
(Ex-13)

Elasticity of a Spring Balance

Load in LBS.	Stretch in $\frac{1}{8}$ ths of an inch
" " 3 "	Stretch $\frac{3}{8}$ ths " "
" " 4 "	" " $\frac{4}{8}$ ths " "
" " 5 "	" " $\frac{5}{8}$ ths " "
" " 6 "	" " $\frac{6}{8}$ ths " "
" " 7 "	" " $\frac{7}{8}$ ths " "
" " 11 "	" " $\frac{11}{8}$ ths " "
" " 12 "	" " $\frac{12}{8}$ ths " "
" " 13 "	" " $\frac{13}{8}$ ths " "
" " 14 "	" " $\frac{14}{8}$ ths " "

2. Experiments to determine the centre of gravity:-

By tilting boxes divided into several compartments, and filled with different substances, the general law was discovered that the wider, lower, and heavier a thing is, and the nearer the heaviest part is to the middle of the base, the firmer it will stand.

To find the reason for the above general law, experiments were made with square sheets of cardboard, potatoes, a piece of paper with a penny stuck on it, and so on; and it was discovered that:-

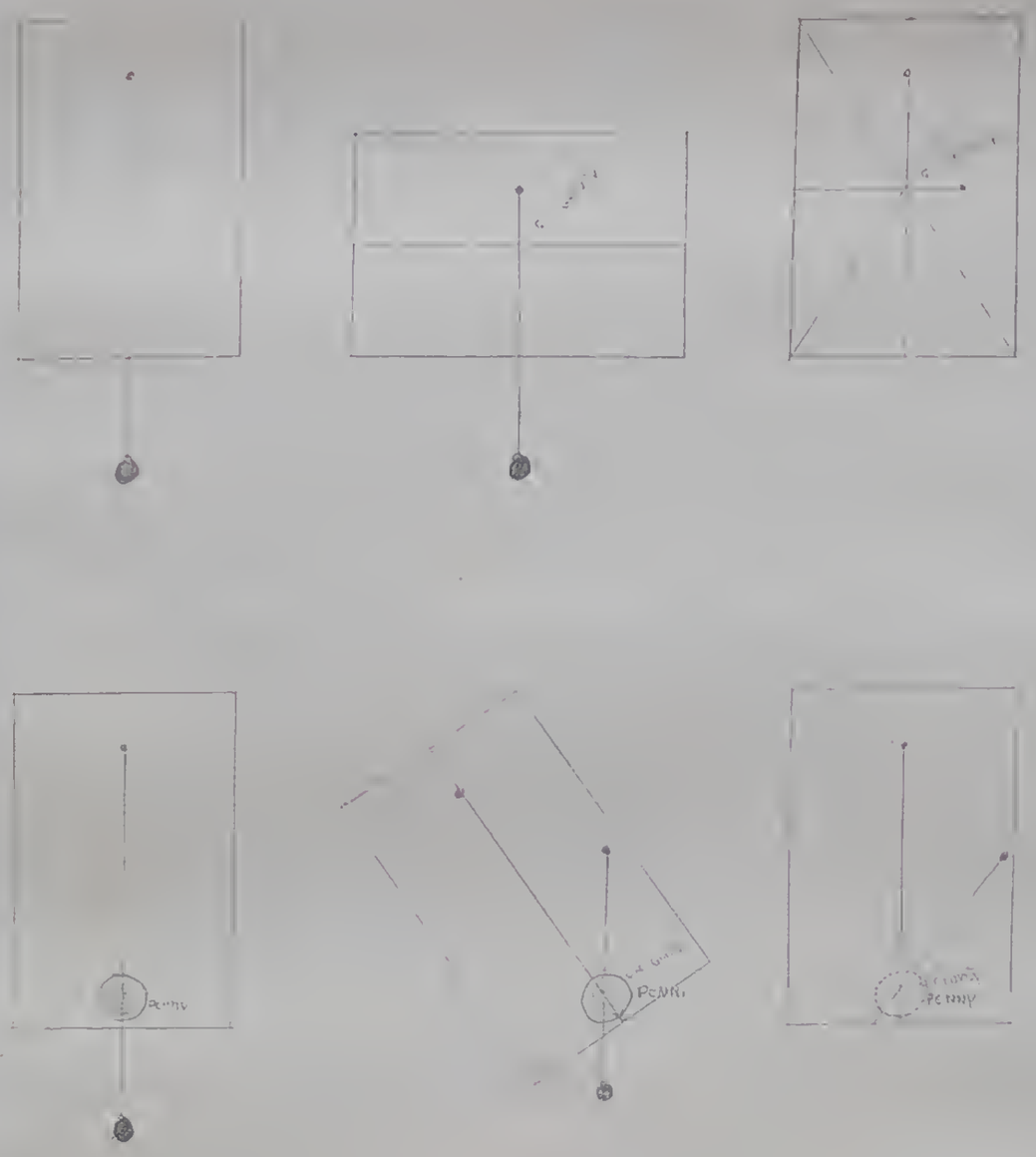
a. In every body there is a part around which all the other parts are in equilibrium;

b. This point is in the middle of bodies which are equally dense all over;

c. But this point is in or near the heaviest part of bodies which are not composed of the same stuff all over.

And so the final conclusion was reached that the nearer this centre of gravity is to the middle of the base, the firmer the thing will stand.

Centre of Gravity of a reclangular piece of paper



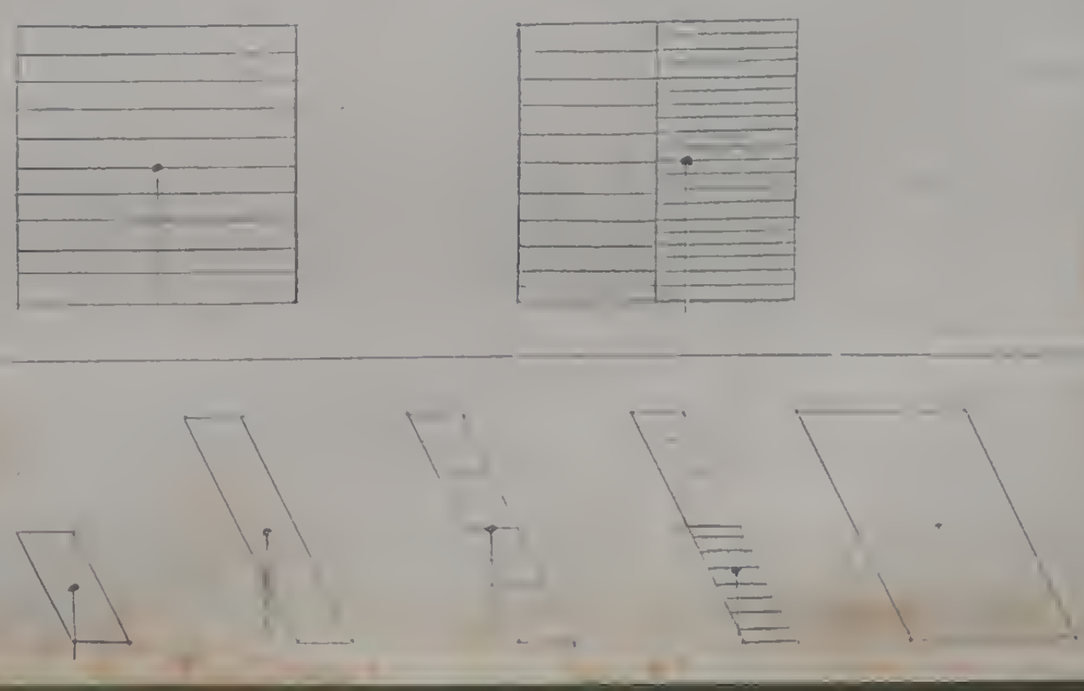
A.G. Jones . age 11.

The Centre of Gravity of a rectangular piece of paper.

We hung the paper on a nail and hung a plumb bob from the nail in front of the paper. Then we marked where the cotton hung. We then put a nail through a different part of the paper and repeated the above.

age 12½ Margaret. M. Jacks. (age 12)

Diagrams to show the position of the centre of gravity



E L E M E N T A R Y C H E M I S T R Y A N D G E O L O G Y.

In this branch the children experiment with chalk and lime, and find that the latter becomes hot when immersed in cold water. They learn why some water is hard, and how to soften it. They find out the composition of the air, and what happens when a candle burns. They make a rough analysis of garden soil, and find that it consists of sand, clay, stuff that will burn, and minute quantities of soluble salts. They learn how soils are formed, and -- in the garden - how to cultivate them.

The chart on the opposite page, made while a well was being sunk on the School estate, shows how - if the programme of work is not too rigid - anything of interest that is going on may be utilised in such work. The rough analysis of the rock into sand and clay was carried on in the class room, and formed a good introduction to the study of ordinary garden soil. The reason that water was found at a depth of 35 feet was explained by the presence of the bed of clay at a depth of 47 feet,- acting like a concrete bottom; and led to the conjecture that below the depth of 135 feet there must be a bed of clay, or some similar impervious rock.

This has led us to study the outcrop of the rocks during our expeditions; the cause of the springs; and the different depth of the soils in the neighbourhood.

Rocks bored through at Bedales

November 1902

(Analysis made by H.B., & H.B.
(age 13.8y)
(" 12.6y.)

Depth	Description of Rocks	Water	Sand	Clay	Thickness of Bed	Formation	
6'	Sandy Loam						
	Loose ferruginous Sand Stone					Folkestone Beds	LOWER GREEN SANDSTONE
		13%	9%	10%	20'		
31	with current Bedding						
	Sandy Clay holding water (grey)	25%	Course brown 22% fine grey	28%	16'	Sandgate Beds	
47'	(green)		50%				
	Stiff Clay	17%	1'	100%	8'		
55'	(grey green)	10%					
	green				5'		
60'	Sandstone					Hythe Beds.	
	Light Green Sandstone Ironstone				14'		
79ft	Ferruginous Sandstone				4ft.		
	Light Brown Ferruginous Sandstone						
97ft.					18ft.		
	Water is found at this level.						
	Red Brown Ferruginous Sandstone						
108ft to 109ft	Dark red brown ss.				1ft.		
	Coarse light brown						
115ft	Sandstone				6 ft.		
	Black coarse						
121ft	Sandstone				6 ft.		
	Brown Sandstone						
135'			83%	15%	14ft.		

Copied by.
T. Scholey aged 11
Temp. " 11

B O T A N Y .

With the writer the work is chiefly botanical. The child observes the germination of seeds and growth of plants; and learns the function of fruit, flower, leaf, stem, and root; how plants store up food for winter and early spring; how wounds heal; how to bud and graft; what diseases attack fruit trees; and the structure and classification of typical plants.

Most of this work is done in the School garden. In the class room a child makes as far as possible his own experiments to find out how plants feed, store up food, move, breathe, grow, sleep cooperate with insects, are fertilised, reproduce and provide for their young.

This is one of the most important sides of botany; for here the child can be introduced in the simplest possible manner to the origin of life, and the questions of sex.

The detailed structure of plants is also observed, and careful drawings made either at the time, or afterwards in the drawing class.

But besides this, the child is taught to interpret [illegible] in terms of its function. Such questions as:- Why is the plant a particular shape or colour? Is there any reason for it? Does it serve any useful purpose?-- serve to stimulate thought and imagination, and make botanical work truly educative.

Wild Arum

Flower — No Sepals or Petals. A Spathe encloses a stalk upon which grow hairs, Stamens with no filament. Ovaries with no Styles, and 3 to 4 seeds. Stigmas are sticky, (ripe) before the anthers shed their pollen ∴ the plant can not fertilize itself.
It traps small flies and lets them go when they are covered with pollen; these crawl into other flowers and fertilize them.

Root — A tuberous root stock containing starch and sugar. Once cultivated in Portland for making Portland Sago

Test for Starch. Tincture of Iodine colours a weak solution of starch in water blue

A L Lance (age 11)

Exp. with starch.

Starch grains may be filtered from water. After being boiled the grains will pass through a filter paper. Boiling bursts the grains.

Diastase

Grind 20 grams of malt with 80 ccm of water, filter several times until the filtrate is quite clear. This contains Diastase and sugar.
Boil 1 gram of starch with 100 ccm of water, and cool it.
mix the two.
Pour a little into a testube and test with Iodine, a blue colour comes.
Repeat this after 5 minutes, a purple colour comes.
After 12 hours repeat again there is no change in colour.
The starch is changed into sugar.

Experiments

Grind up some Barley in water, pour off the liquid, heat it, till it turns semi-transparent, cool it and add iodine tincture (= iodine dissolved in alcohol) and you get a blue colour.
Fehlings Test when boiled with the liquid does not change.

Germinated Barley

Grind this in water, filtere, and boil with Fl, a brick red powder appears which proves the presence of Grape sugar.

potatoe starch under the microscope.

starch grains after being boiled.

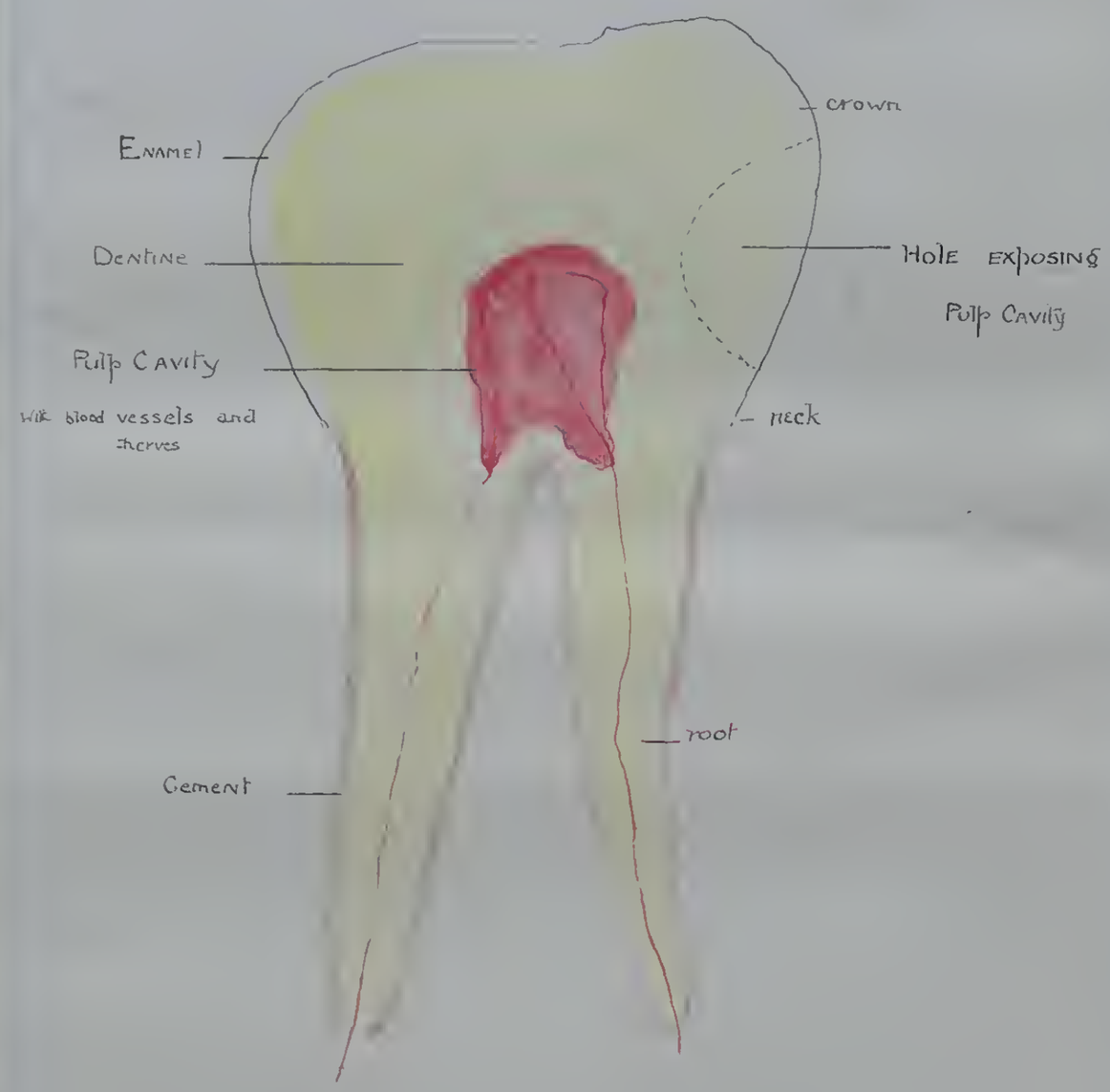
H Y G I E N E .

In the winter and spring terms part of the time is spent in learning the hygiene of the body and home. How to keep oneself healthy: why we must take exercise and rest, and learn to sit and hold ourselves properly: why we clean our teeth and bodies: how our food nourishes us: how to dispose safely of waste products: what clothes we should wear, and when. As far as possible, the children are made to live as well as learn hygiene, and the daily School routine forms the basis of what is taught. For instance, in talking of the cleaning of teeth, experiments are made to find out their composition, and the causes of decay; this leads to the means of their preservation: and further experiments are made to try and grow, or prevent the growth of, bacteria.

Next this comes the study of foods, digestion, and assimilation. A rough analysis of milk is made to learn the difference between proteid, carbohydrate, fat, and salts. Then follows some explanation of the School dietary.

The disposal of waste leads to the inspection and explanation of grease traps, inspection chambers, ventilation pipes and gully traps, ash-pit, and dry earth closets belonging to the School buildings; ventilation and breathing; heating and clothing; water supply and washing, are all treated in much the same manner. And thus the child not only learns from habit to live hygienically; but comes to realise the reason for and the importance of obeying the laws of health.

Diagram of a Tooth



R G Livens age 11

In the Upper Middle School we begin the more systematic study of Physics and Chemistry.

Aim. We do not regard the laboratory as a place where laws stated in text books, or heard in lectures, are to be illustrated, or even verified: but as a place where a boy gathers his own facts, in order to gain from them an insight into natural phenomena. We wish to teach boys how to set about investigation for themselves, and to start them thinking and reasoning, so that, when they meet with practical difficulties in after life, they may not be merely dependent on books, and records of other people's experience.

Method. We do not, therefore, begin with theory, but give first a solid foundation of experimental fact, only introducing theories when the need of them is evident. We use no text books until boys are very well advanced; the boy's own record of experiments worked out, and inferences made, forms his text book;- the result being that the Science note-books are valued treasures, and that, when finally books are introduced, their use is understood, and they are not the hated things they so often appear to boys. In the note-books, wherever possible, a clear distinction is drawn between the arrangement of the experiment, the observations made, and the inferences drawn from them.

Course.

1st. year.	(Average age,	14.)	Heat, Light, Mechanics.
2nd. "	"	15)	Chemistry.
3rd. "	"	16)	Chemistry and Advanced Mechanics
4th. and 5th. years	"	17-18)	Mechanics of Liquids, Electricity, Magnetism, Sound, advanced Heat, Light, and Chemistry.

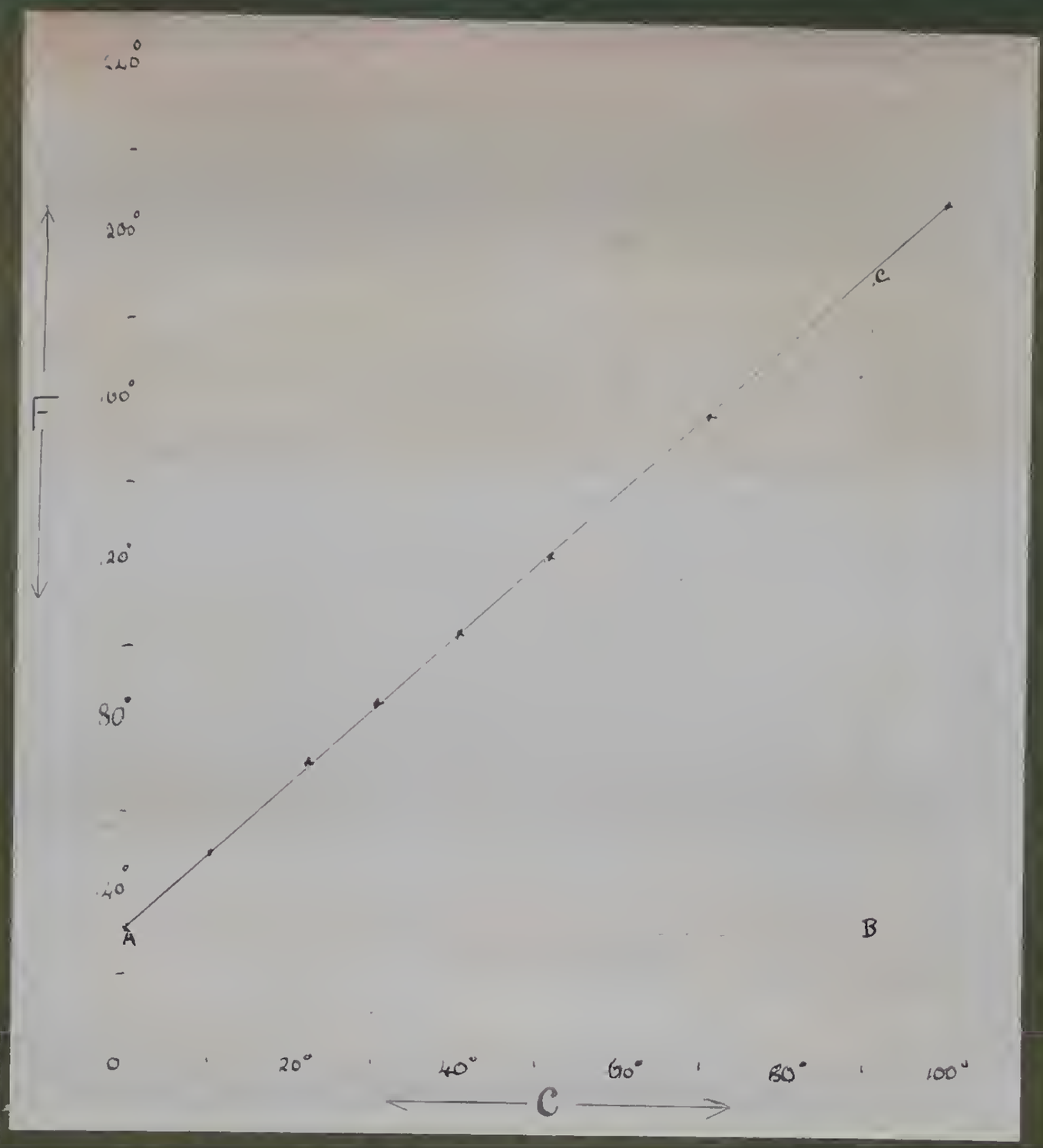
Note. The methods employed are illustrated by one or two typical examples in each branch. These are taken mainly from the earlier stages, as it is here that the inductive method is at once most important, and most often neglected. In the Upper School, when a solid foundation has thus been laid, the work can approximate without so much loss to the ordinary type, as required for examinations.

In the chemical laboratory.

In the [illegible] laboratory.

Comparison of Thermometers.

A typical example of the method employed is to be found in the comparison of thermometric scales. The thermometers are first immersed in melting ice, and then in water at various temperatures from 0° C to 100° C. On plotting the curve, it is found to be a straight line. The boy's mathematical training now stands him in good stead. He knows that $y = x$ is a straight line, and a little questioning soon leads to the information that $y = \frac{1}{2}x$ plus 3 also represents a straight line. A few arbitrary examples soon make clear what the $\frac{1}{2}$ and the 3 stand for. When this stage has been reached, the class is ready to find the equation for the experimental line, viz., $y = \frac{9}{5}x$ plus 32,- the use of which can then be demonstrated by some examples on conversion of scales.



L.A. Northam. (age 14)

Experiment, To compare Fahrenheit and Centigrade Thermometers.

Inference

When you plot on the values of F against C, you plot a straight line which cuts the axes of y. at 32°

A.O. = 32

AB = 90

BC = 162 $\quad \frac{CB}{AB} = \frac{162}{90} = \frac{9}{5}$

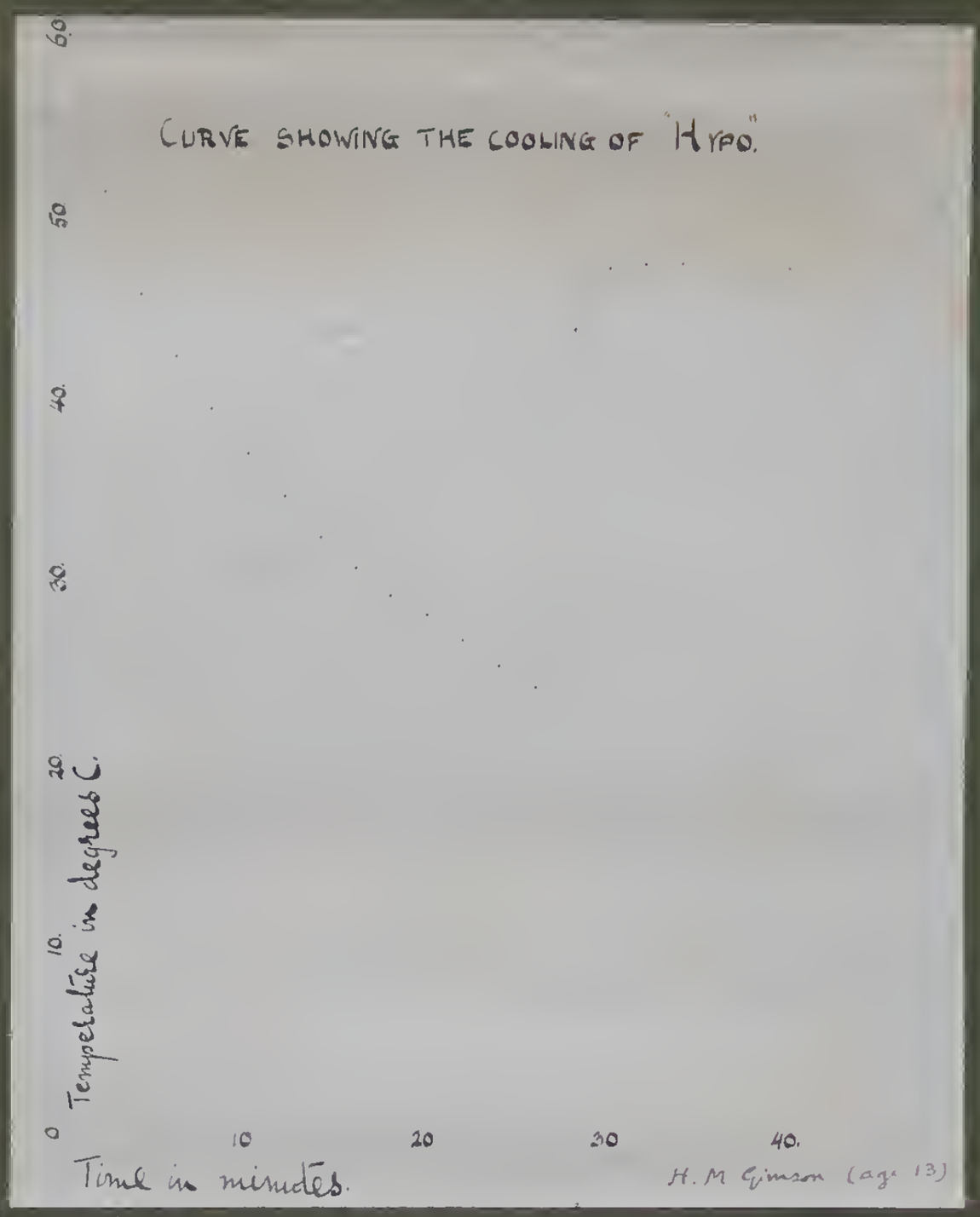
Therefore the equation of the straight line is

$y = \frac{9}{5}x + 32$ or

$F = \frac{9}{5}C + 32$

Limitations. The method of treating experimental results described for the comparison of thermometers is used throughout the entire physical work. It is not, of course, always possible to obtain mathematical formulas for experimental curves, but our boys who have grown accustomed to the methods are never content without at least having tried. It is well to let the limits to which our powers of observation and reasoning have attained be felt.

Curve of cooling of 'Hypo". The curve showing the rate of cooling of some melted "Hypo" is an instance in point. It cannot be expressed mathematically, but it has a very distinct educative value, since it shows graphically the internal procedure, and at the same time introduces the most scientific method of measuring the solidifying point. It affords most convincing evidence of the heat evolved during solidification.



To find the melting point of Sodium Thiosulphate or Hypo.

Take some solid Hypo, put it in a test-tube, with a thermometer through a cork in the neck. Then heat up with a spirit flame until it is all melted and the temperature is about 60°. Then take readings of the temperature every 2 minutes while it cools. Results:

Minutes.	Temperature.	Minutes.	Temperature.
0	60°	22	26·9°
2	51·5°	24	25·5°
4	45·8°	26	24·4°
6	42·5°	28	44·1°
8	39·7°	30	47·5°
9	37·1°	32	47·7°
12	34·8°	34	47·8°
14	32·6°	36	47·8°
16	30·9°	38	47·7°
18	29·3°	40	47·6°
20	28·2°		

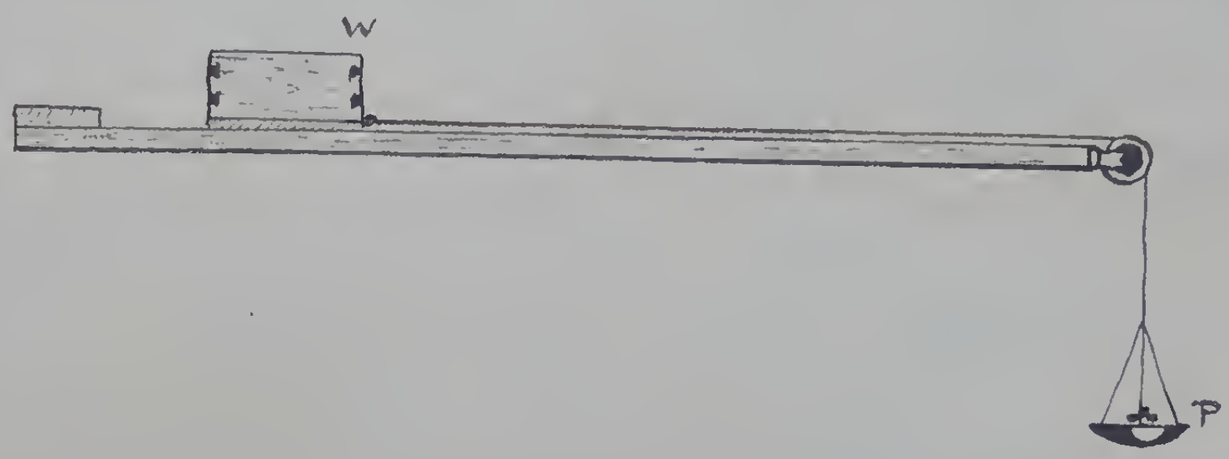
PRACTICAL MECHANICS.

This is a subject which, from the simplicity of its generalisations, as well as from the fact that it deals with obvious phenomena, receives considerable attention.

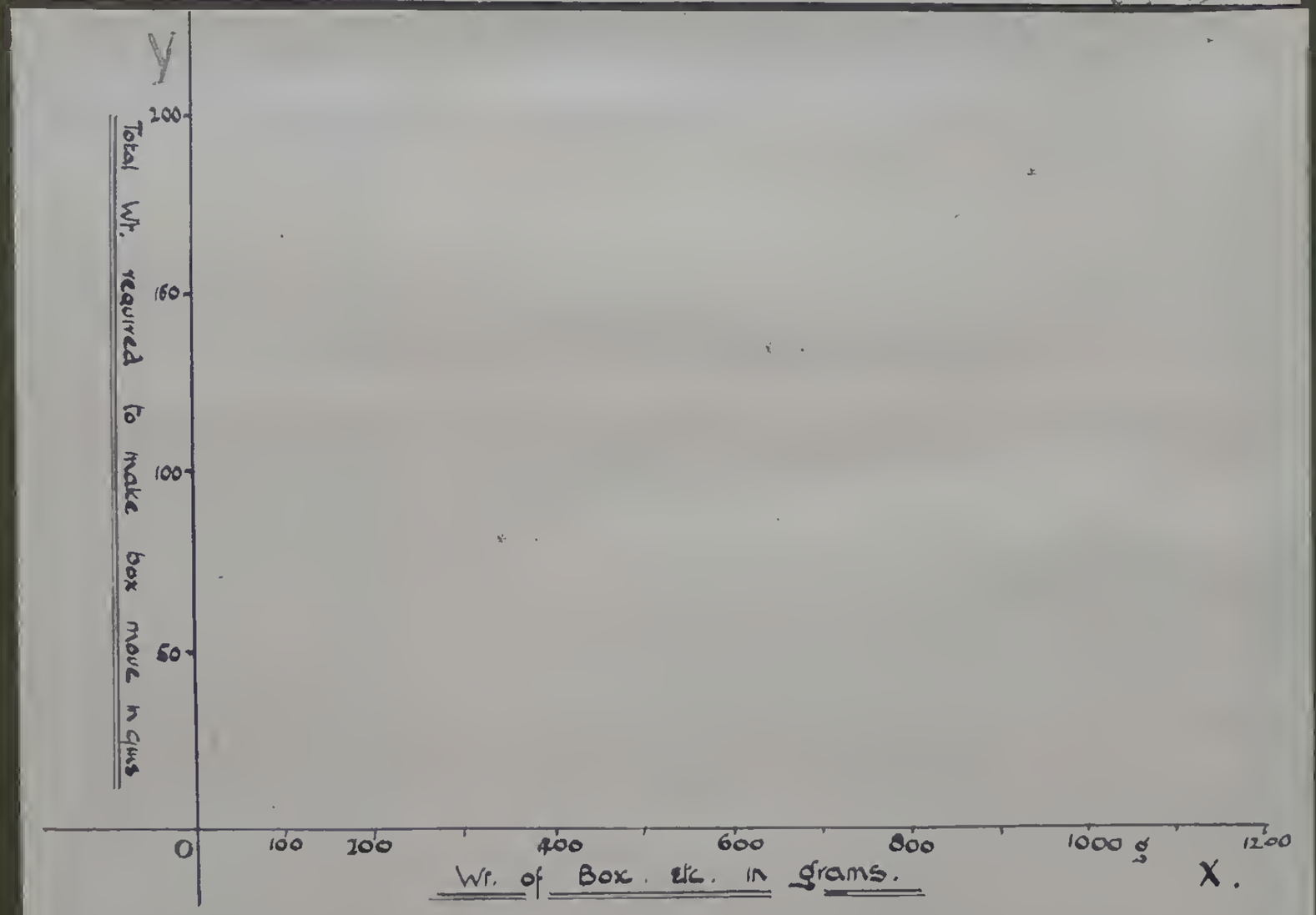
Friction.

A very common mistake in teaching mechanics is to attempt to demonstrate principles by the help of machines in which the friction is reduced to a minimum. It is much better to use machines in which the friction cannot be overlooked, and to show the boy at an early stage how to make allowance for it. For this reason the laws of friction on a horizontal plane are fully investigated.

An example of such work is here inserted. The curve obtained - again a straight line - does not pass through the origin. This means that force is required to move the box even when it has no weight, if such a thing can be imagined. A boy who has got his results so carefully as to be certain of them naturally seeks for an explanation. The amount of force required to keep the pulley in motion was not nearly 20 grams - the amount of the discrepancy - and thus a result has been obtained which could only be accounted for by the friction of the air.



W. Lucas (age 15)



FUNCTION OF CURVE:- $y = .184x + 20$ $P = .184W + 20$.

$\therefore$ Coefficient of Friction = .184

Results :-

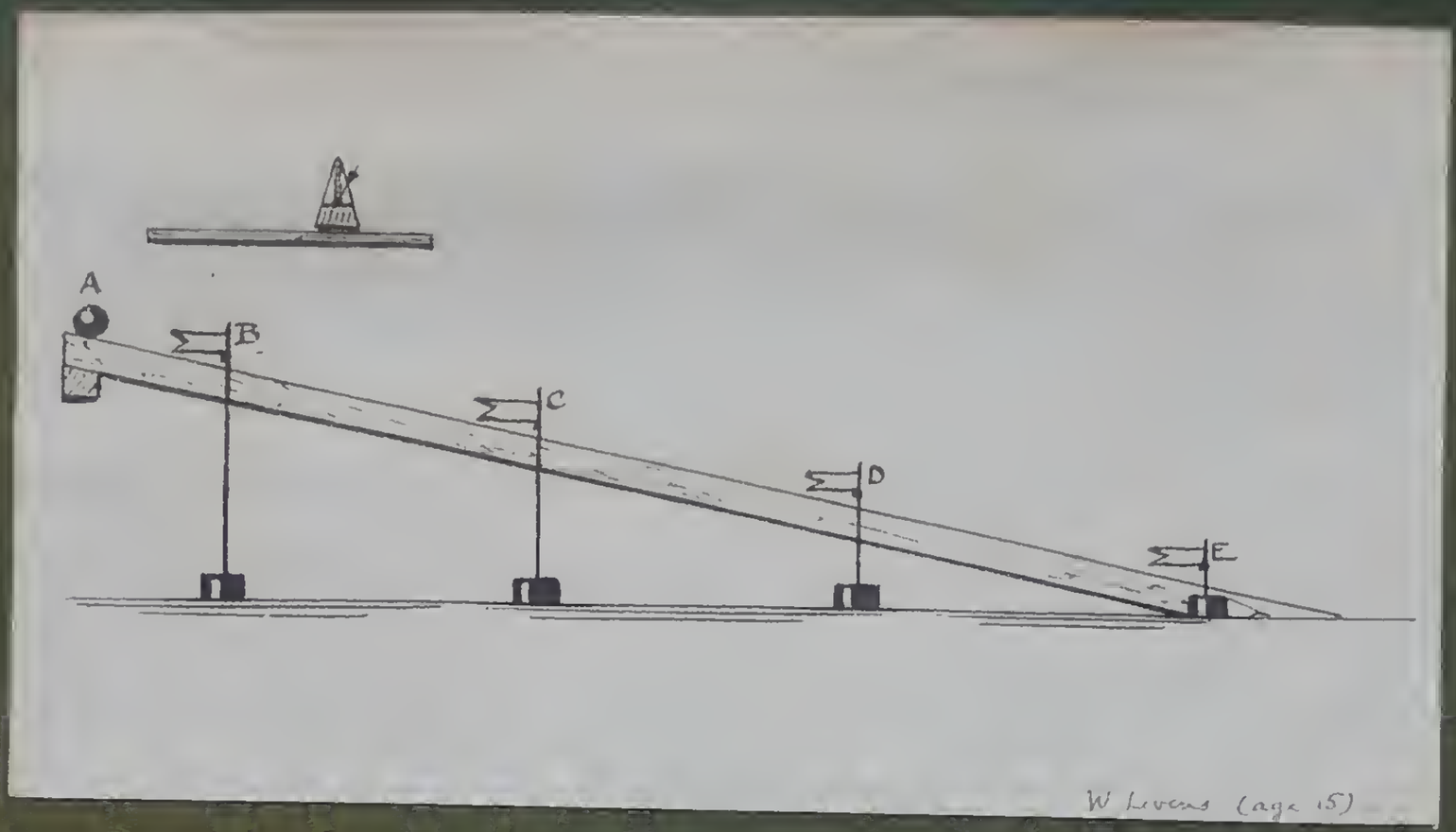
TOTAL WEIGHT OF BOX AND Weights in it. W	TOTAL WEIGHT REQUIRED TO MAKE BOX MOVE P
341.60 GRAMS	81.70 GRAMS
641.60 " "	134.70 " "
941.60 " "	183.40 " "
1141.60 " "	221.90 " "

LAWS OF FALLING BODIES.

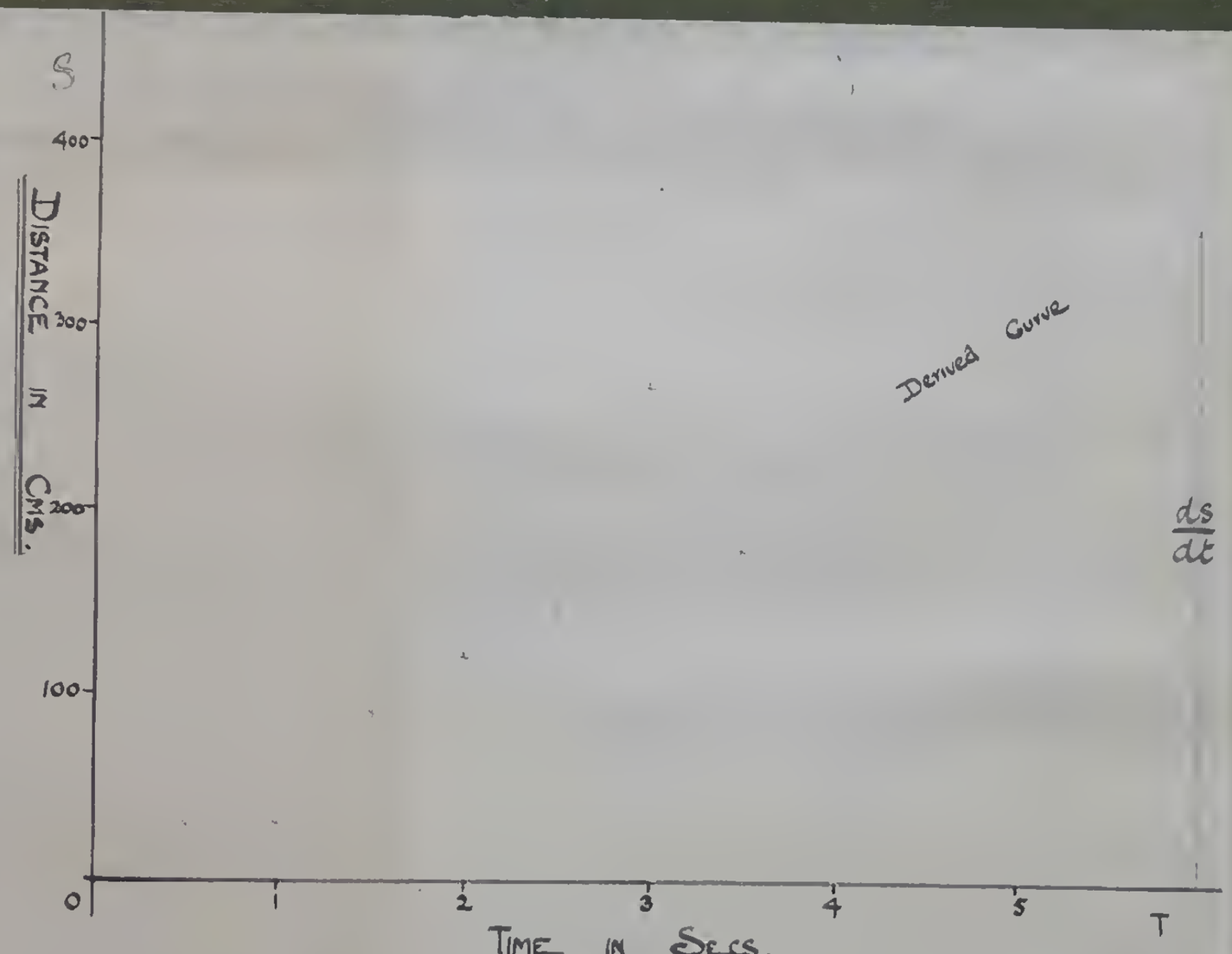
To arrive at the laws of falling bodies, although we have an Atwood's Machine, constructed by a boy, which gives most excellent results, the simplest and most satisfactory method is to allow a large glass marble or billiard ball to roll down a groove in a wooden plank about 5 metres long and place tin flags at the points it reaches at the end of one, two, three and four seconds respectively. The click of the ball against the flag is made simultaneous with the tick of a metronome,- in itself a most excellent training for the ear,- and the effect when all the flags are correctly placed gives no small pleasure. The kind of results obtained, and their treatment will be evident from the illustration.

Using the Atwood's Machine.

The Machine made by Tyssen, age 13.



W Livens (age 15)



FUNCTION OF DERIVED CURVE :- $\frac{ds}{dt} = 59.28\,t$

$\therefore$ FUNCTION OF PARABOLA :- $S = 29.64\,t^2$

RESULTS :-

S	T	$\frac{ds}{dt}$	Average t
30·4 cms	1 sec	30·4	·5
120·2 "	2 "	89·8	1·5
268·3 "	3 "	148·2	2·5
449·7 "	4 "	181·4	3·5

CRUCIAL TEST OF ACCURACY

In scientific research a scientist is not content with a single method of measurement. Hence in determining such constants as the specific gravity of a liquid, two or more methods are employed, a comparison of results giving a crucial test of the accuracy of measurement.

INSTANCE: Specific gravity

The specific gravity of a sample of wood spirit by various methods was as follows:-

a.	By specific gravity bottle	·8174
b.	By balancing a column of it against a column of water	·8170
c.	By use of principle of Archimedes	·8171
d.	By hydrometer	·8175

HYDRODYNAMICAL PARADOX.

Photograph,- lead ball in stream of water. ⇌.

All apparatus shown on these pages was made by the boys using them.

L I G H T .

Light is introduced by the pin and drawing board methods now becoming well known. The angles of incidence and reflection from a plane mirror are measured as sines -- the name sine being introduced as soon as the advantage of having a symbol for the ratio perpendicular : hypotenuse has become self-evident.

CLASS RESULTS FOR REFLECTION.

The results got by a class of beginners - working in pairs - are here given to illustrate the degree of accuracy which can be got, and to show the advantage of a number of experimenters all working at the same subject:-

Sin i	Sin r.
·577	·572
·624	·622
·565	·564
·611	·603
·492	·484
·635	630
·660	·673

The variety of the values obtained shows that the law is true for all angles. Since the class does not know the law beforehand, there can be no attempt at "cocking", and the comparison of class results in this way is an excellent stimulant to accuracy of work.

E L E C T R I C I T Y A N D M A G N E T I S M .

These subjects are at present only systematically studied in the Upper School. Our starting point is current electricity, since the electric lighting of the School makes that the more familiar.

Ohm's Law.

Ohm's law gives an opportunity for the examination of hyperbolas, which is the more welcome since they are of less frequent occurrence in physics than straight lines and parabolas. Boyle s law presents another instance, but one which is more difficult to arrive at.

By plotting C against R the relation is not at once apparent, and the method of derived curves leads to no better result. When, however, C is plotted against $\frac{1}{R}$, the relation becomes quite clear.

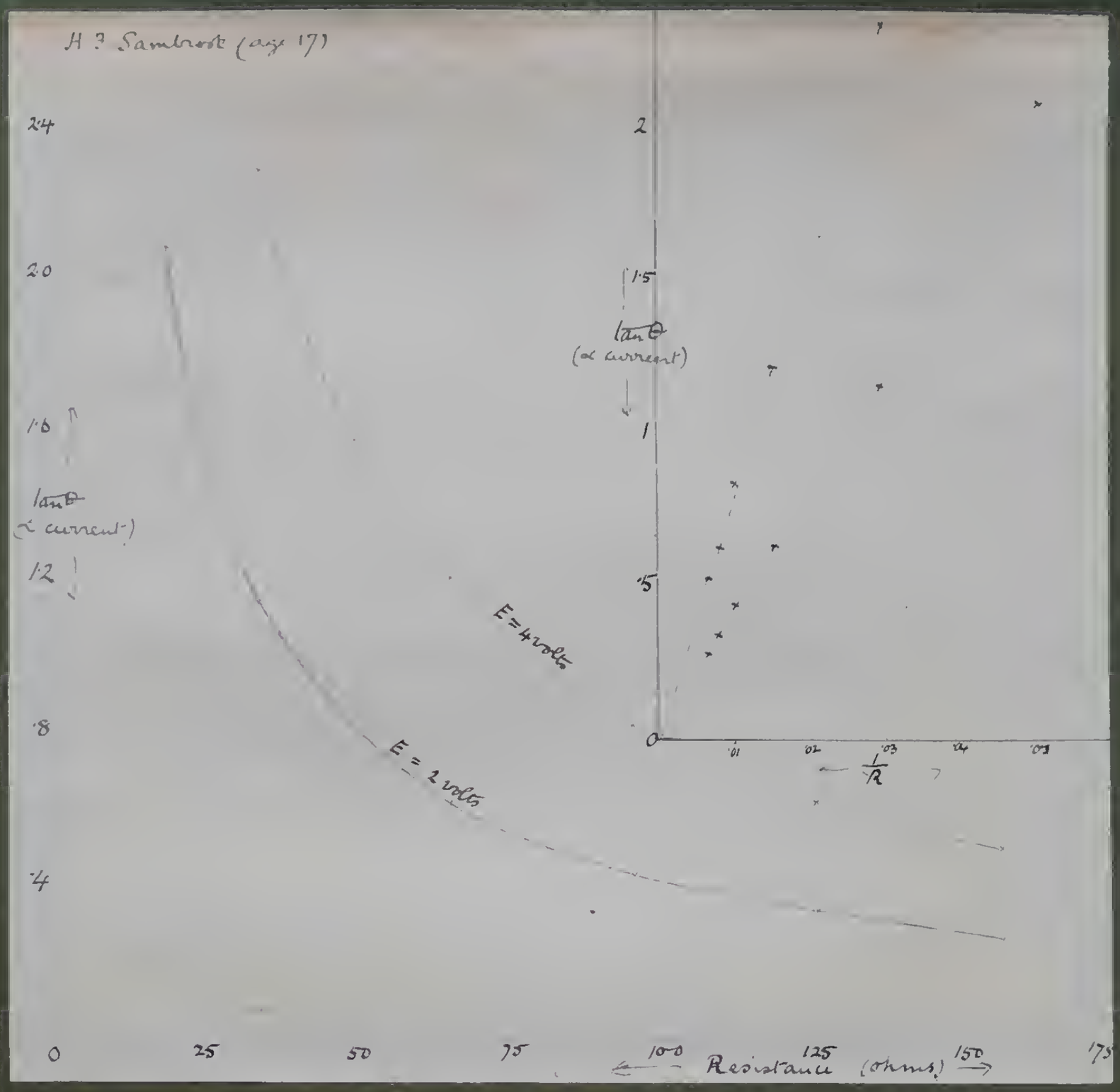
From each of the straight lines we get

$$C = \frac{k}{R} , \quad (k \text{ being really } E),$$

since both pass through the origin.

PHOTOGRAPH VII.

[illegible] by B. L. Gimmor, June 15.)



To find how the Current varies with the Resistance.

	Resistance (R)	1/R	θ	tan θ ∝ C
E.M.F = 2 volts.	18·67	·05327	64·37	2·0872
	33·87	·02956	49·12	1·1551
	65·17	·01534	32·125	·6277
	95·47	·01047	23·47	·4348
	125·77	·00795	18·75	·3395
	156·97	·00637	14·87	·2661
E.M.F = 4 volts.	33·87	·02956	66·5	2·2998
	65·17	·01534	50·625	1·2174
	95·47	·01047	39·95	·8361
	125·77	·00795	32·37	·6346
	156·97	·00637	27·27	·5161

C H E M I S T R Y .

INTRODUCTION. Starting from water, we examine its physical properties,- evaporation, distillation, purification and solution of salts. We then pass to its decomposition by an electric current, representing its composition from the experiment as H_2O.

LINES OF ADVANCE. Of the two lines of advance - hydrogen and oxygen- thus opened up, we choose that leading to the familiar phenomenon of combustion. Our object here is considered accomplished when each member of the class has proved to his own satisfaction that every substance which he examines gains weight in burning.

LAW OF CONSTANT COMPOSITION. The first real step in chemistry is achieved when the class measurements show that a gram of tin in oxidising always takes up the same amount of oxygen, however much nitric acid was used in producing it. Needless to say, the proof would fall flat if the class were not already - from its previous work - trained to careful measurements.

ACIDS. The hydrogen line of advance brings us at once to acids, the physical and chemical properties of which are examined. A most instructive piece of work is achieved in the examination of the heating effect produced by mixing sulphuric acid with water. Curves, showing that the rise of temperature depends upon the proportion of acid taken, are constructed.

BASICITY. The idea of basicity is so fundamental that some time is devoted to its determination in the case of the the better known acids. The account of such a piece of work, reproduced from a note-book, is given in order to show how simply the basicity may be firmly established.

L A Newnham (age 14)

The Basicity of Nitric Acid.

Part I

First we took 50 ccs. of Caustic Potash solution and put some Phenol Phthalein in. Then we powred dilute Nitric Acid in from a burette until it was neutralized. We then evaporated to dryness.

Observation	Inference.
Crystals were formed which weighed 8·75 grams. We then tested for acid and alkali but it was entirely neutral.	The crystals were neutral.

Part II

We took again 50 ccs. of Caustic Potash and put 12·43 ccs. of Nitric Acid in (the amount required to neutralize it). Then we ran in another 12·43 ccs. Then we evaporated to dry-ness.

Observation.	Inference.
Crystals were formed which weighed 8·76 grams. Then we tested for alkali and acid but could not find any change.	These crystals were also neutral.

Inference of whole Experiment.

Although we have taken twice as much acid in one case as in the other, the amount of Saltpetre formed was exactly the same ∴ it is a Monobasic Acid.

Copper Sulphate as a research subject.

Copper sulphate affords a most excellent subject for research. Its water of crystallisation is determined in the ordinary way. We then transform it into a black compound by the action of potash, and measure the weight of this substance obtained. When hydrogen is passed over the heated black compound, water is seen to be formed, and we conclude that the black compound has given up oxygen to the hydrogen, copper being at the same time left. Hence we learn that the black compound is an oxide of copper. We measure how much copper there is in the oxide, and thus are enabled to calculate the percentage of copper in the original sulphate. Assuming the atomic weights of copper, oxygen, sulphur and hydrogen, we can arrive at the formula for the blue sulphate.

Percentage Composition.			Average Class result
H_2O = 36·646	or	$\frac{36·646}{18}$ =	1·980 smallest portions
Cu = 25·981	"	$\frac{25·981}{63}$ =	·412 " "
SO_4 = 38·373	"	$\frac{38·373}{96}$ =	·399 . " "

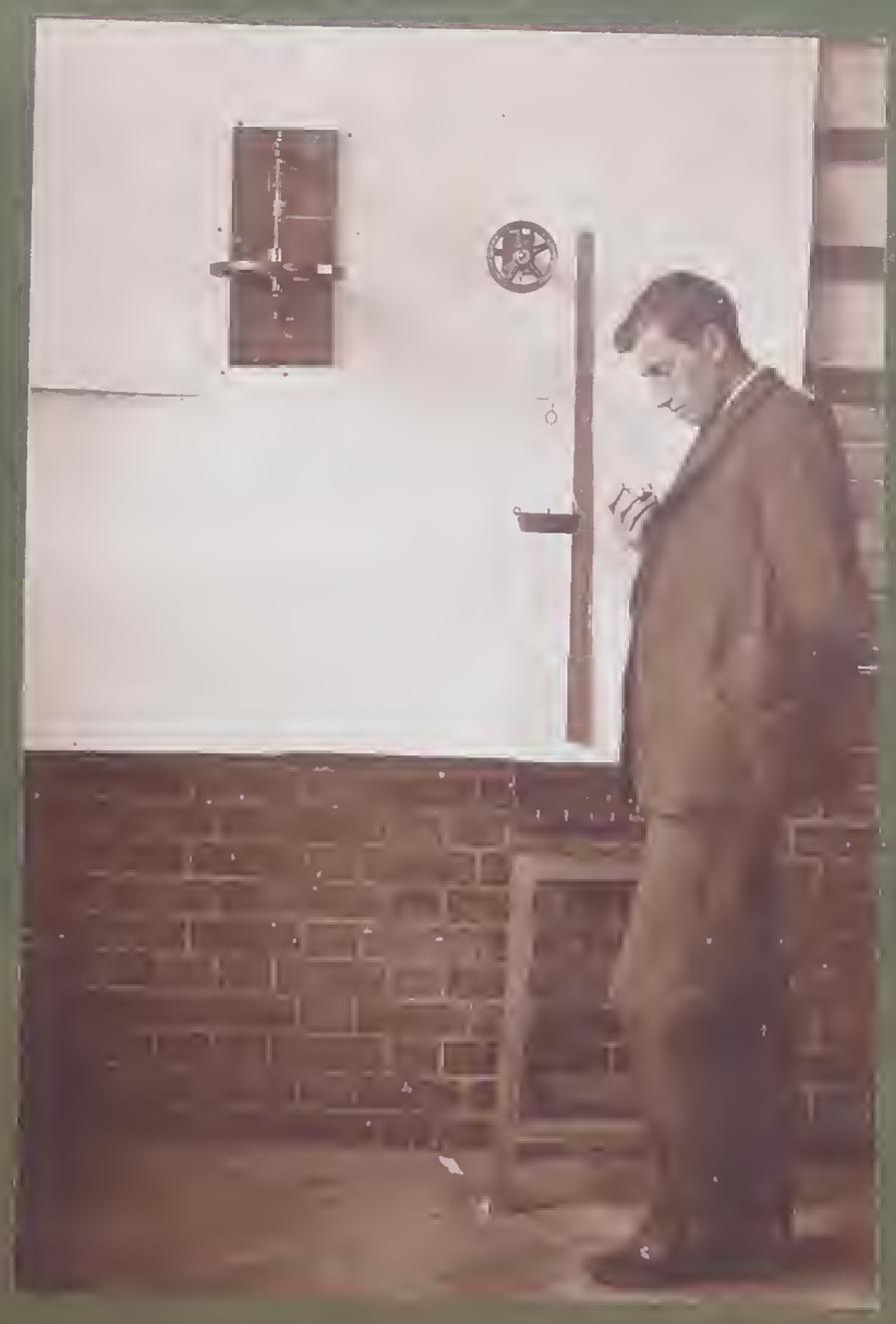
The numbers 1·980, ·412, ·399, are in the ratio 4·97, 1·03, 1·00; and the class sees at once that in the smallest possible portion of compound there are $5H_2O$, 1Cu, and $1SO_4$, giving the formula $CuSO_4.5H_2O$. Some of the individual results are better than this, but even the average result shows that satisfactory results can be obtained.

Law of Multiple Proportions.

By the help of grape sugar and caustic potash the red oxide of copper is now prepared. It is reduced to copper in the same way as the black oxide, water being again formed. Another instance of actual results got must here be given. Composition of the two oxides of copper:--

Black oxide	1·521	Copper,	·388	Oxygen:	or 1 : ·255
Red "	2·078	"	·264	"	" 1 : ·127.

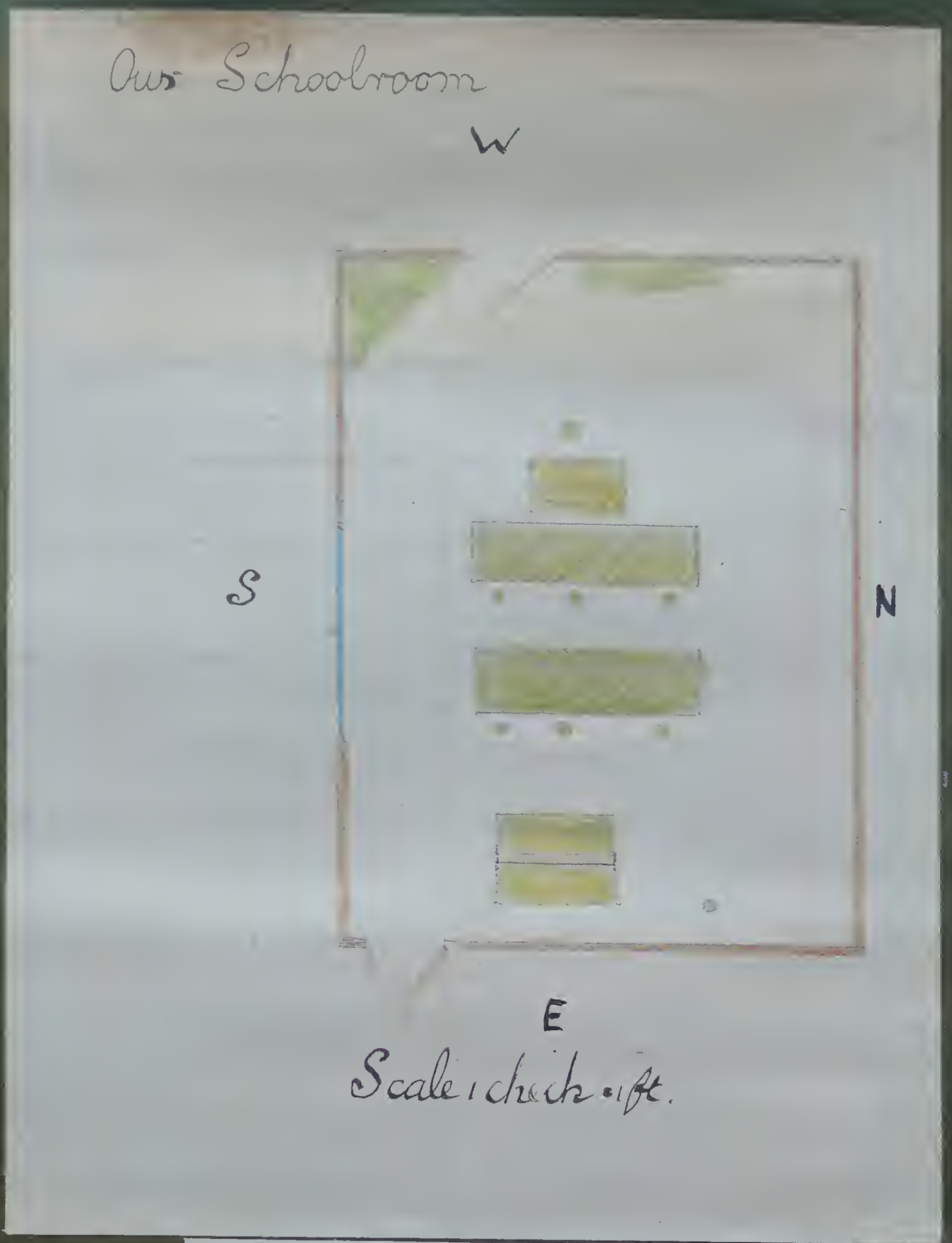
As it is evident that ·127 is half of ·255, we have taken a great step towards the law of multiple proportions.



G E O G R A P H Y .

In the Lower School the children are made familiar as far as possible on their walks and expeditions with certain geographical forms and terms. They draw simple plans of the school room, garden &c; and so understand the meaning of a map. They make maps from their own observation of bits of the country that they explore. They also begin to make acquaintance with the world at large by tracing out the evolution of some human custom, such as the building of dwellings, from the most primitive mud huts to the "sky-scrapers" of New York, which they see in pictures. They also become familiar with other countries by means of stories of travel and discovery, and pictures of the country with which the story deals.

They keep daily records of changes noticed in the sun, moon, rain-fall, and winds,- which lay the basis of the study of physical geography.



Plan of schoolroom. (J. Thompson, age 9).

Map-modelling in the Lower School.

In the next stage the aim is to make the children thoroughly familiar with Great Britain and its colonies. The greatest emphasis is now given to the physical aspects of the country studied, and especially of England, as most of the children have opportunities of visiting places where the forces of Nature are seen in actual operation,- such as the sea coast, mountains, valleys &c.

They then pass on to the study of the great continents. About half of their time is still given to physical geography,- or, more correctly speaking, to the geographical aspects of that Science. For example, movements of the earth, eclipses, tides, and winds, coral formation, and so on.

This course of physical geography is not taken as a separate study: but topics it includes are dealt with as they arise, as part of the phenomena of the country being studied. Thus, for example, the United States of America have been studied this term; and in connection with those, differences of climate, and the results of river erosion.

Map to show:- Agriculture, Mining, Fishing.

S. W. Coffin.
(age 13)

The tints denote the proportion of the population, engaged in agriculture.

- Over 40 p: cent.
- 20-40 p: cent.
- 10-20 p: cent.
- Oyster Beds
- Under 5 p: cent.
- 5-10 p: cent.
- Coal fields.

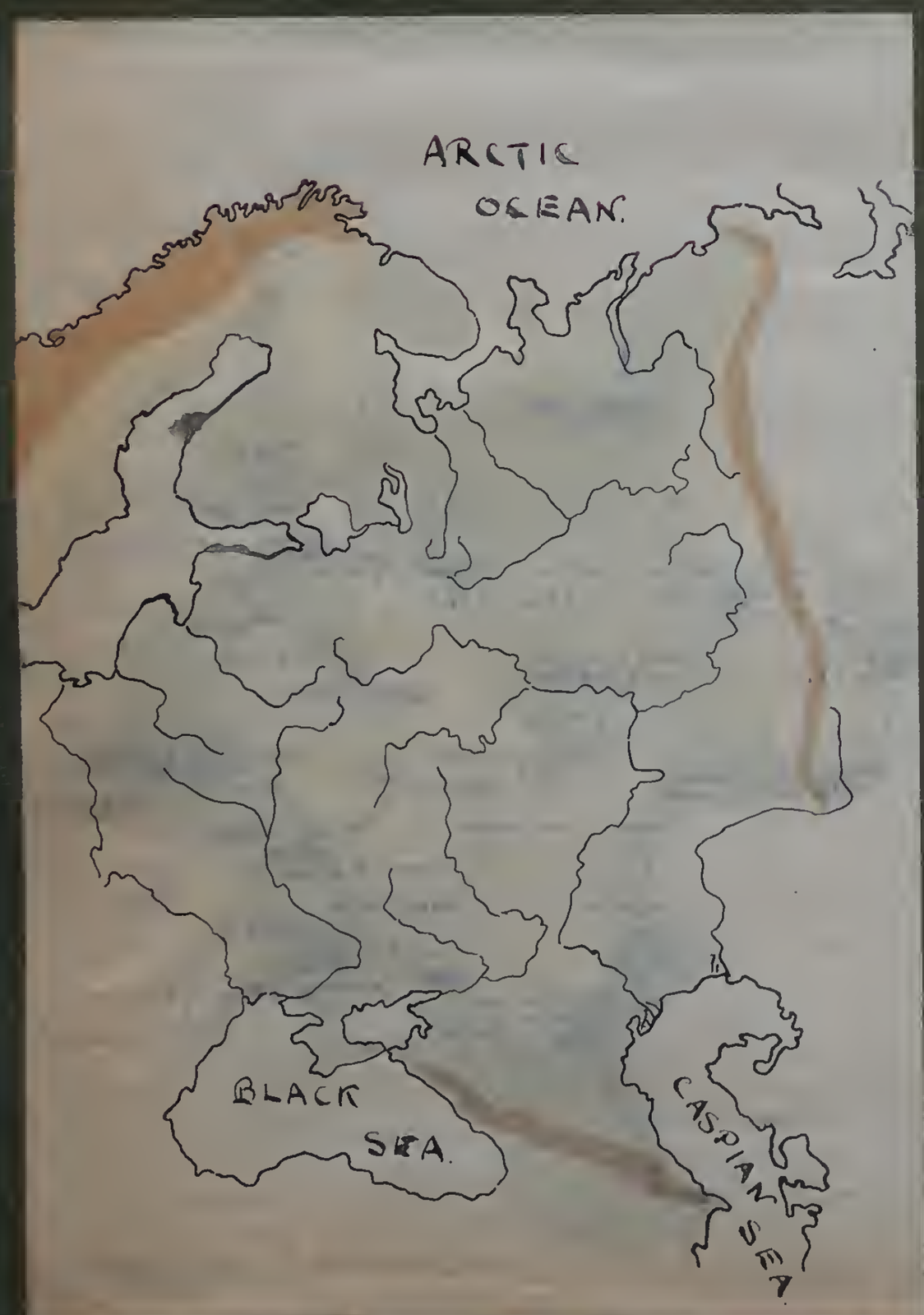
Co: = Copper.
Ir: = Iron
L: = Lead.
T: = Tin.
Z: = Zinc.

...tly, in the upper middle school, the children come back to Europe, this continent being taken last on account of the importance of its political aspects.

Throughout all the geography teaching constant reference is made to the atlas,- the aim being to teach the children the use of a good atlas, so that, to a large extent, they are independent of text books.

There is a large collection of pictures in the school, from which suitable selections can be made for any given lesson; and when so used, these pictures remain upon the class room walls for some days, in order that the children may become thoroughly familiar with them.

Map knowledge is further supplemented, and made more real, by the occasional use of the lantern.



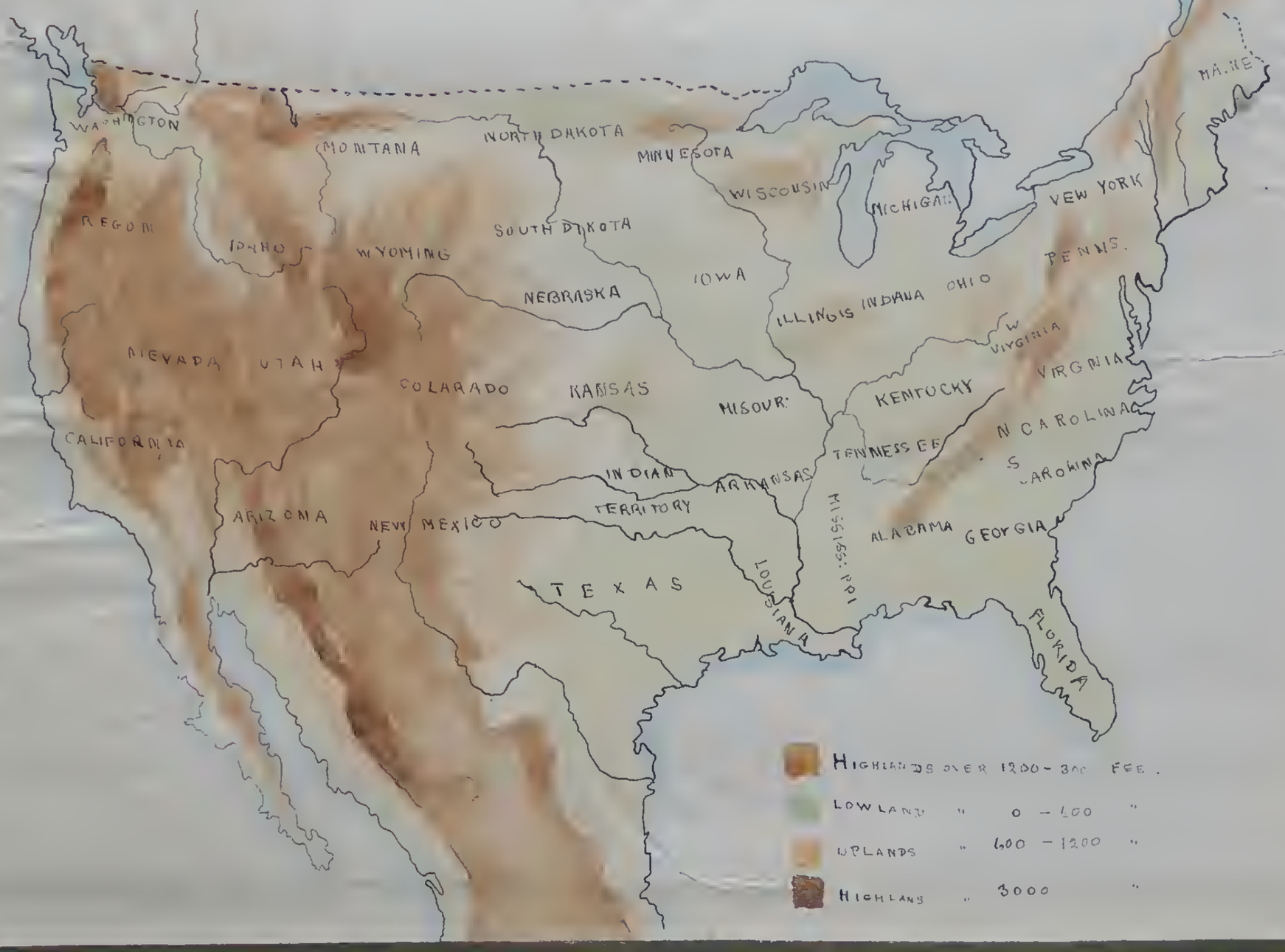
...tlines are filled in from memory, to show physical features, route of excursions, centres, &c.

Outline map to show physical features. (W. C. Livers, age 11).

Saida Bonnell. (age 15)

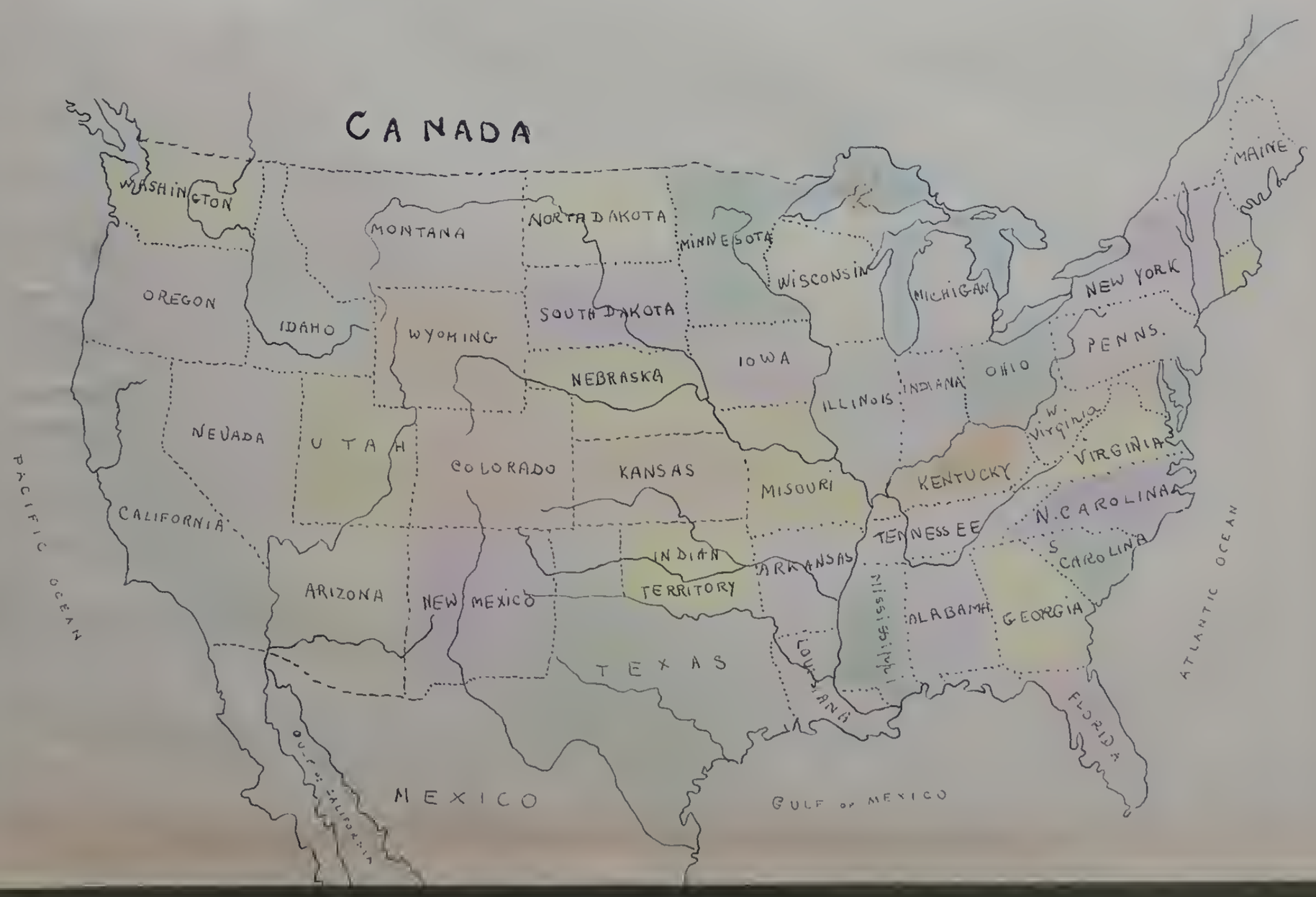
UNITED STATES.

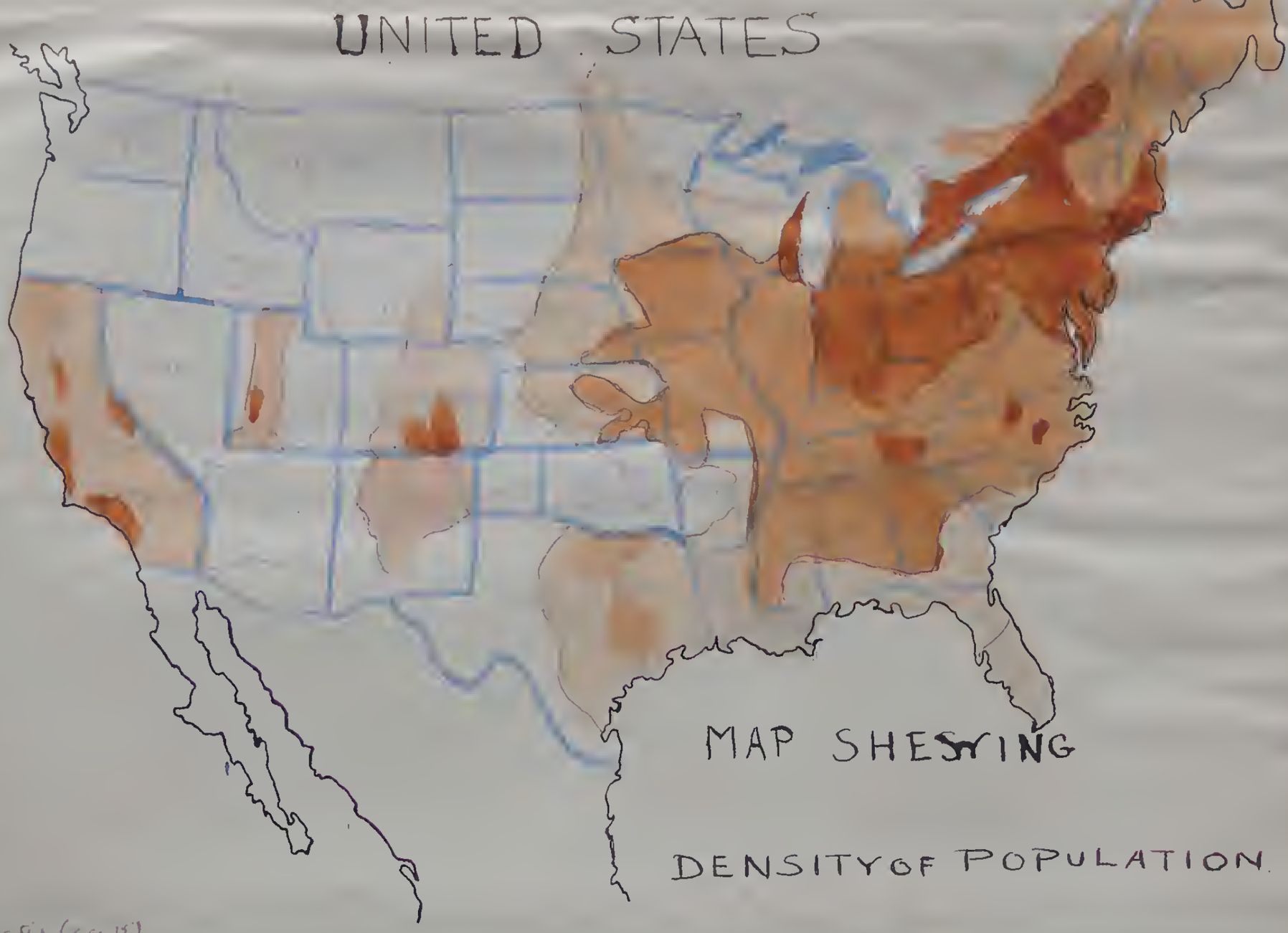
To show Physical Features.



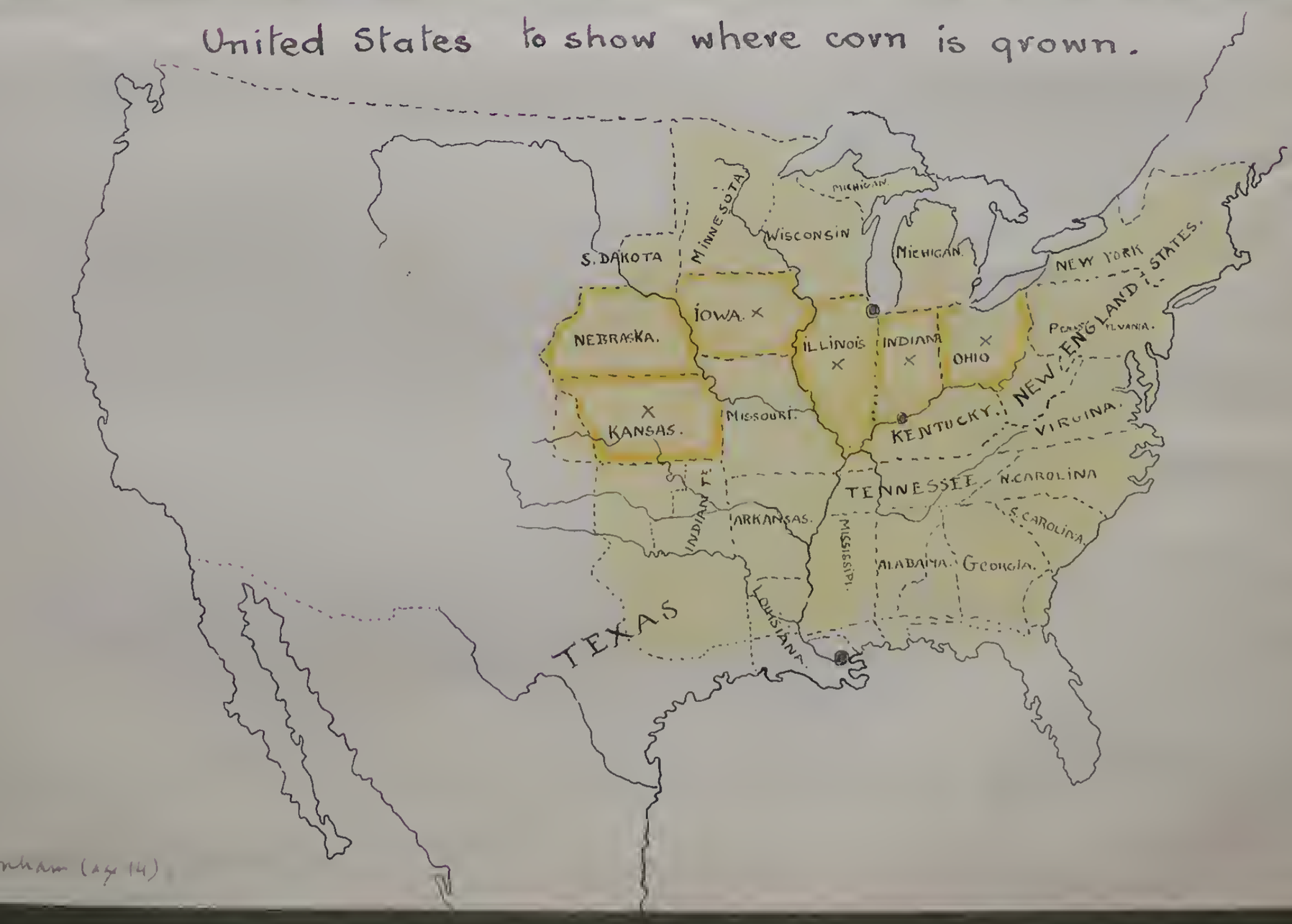
Helen Virogradsky (age 11)

United States to show Political Divisions.



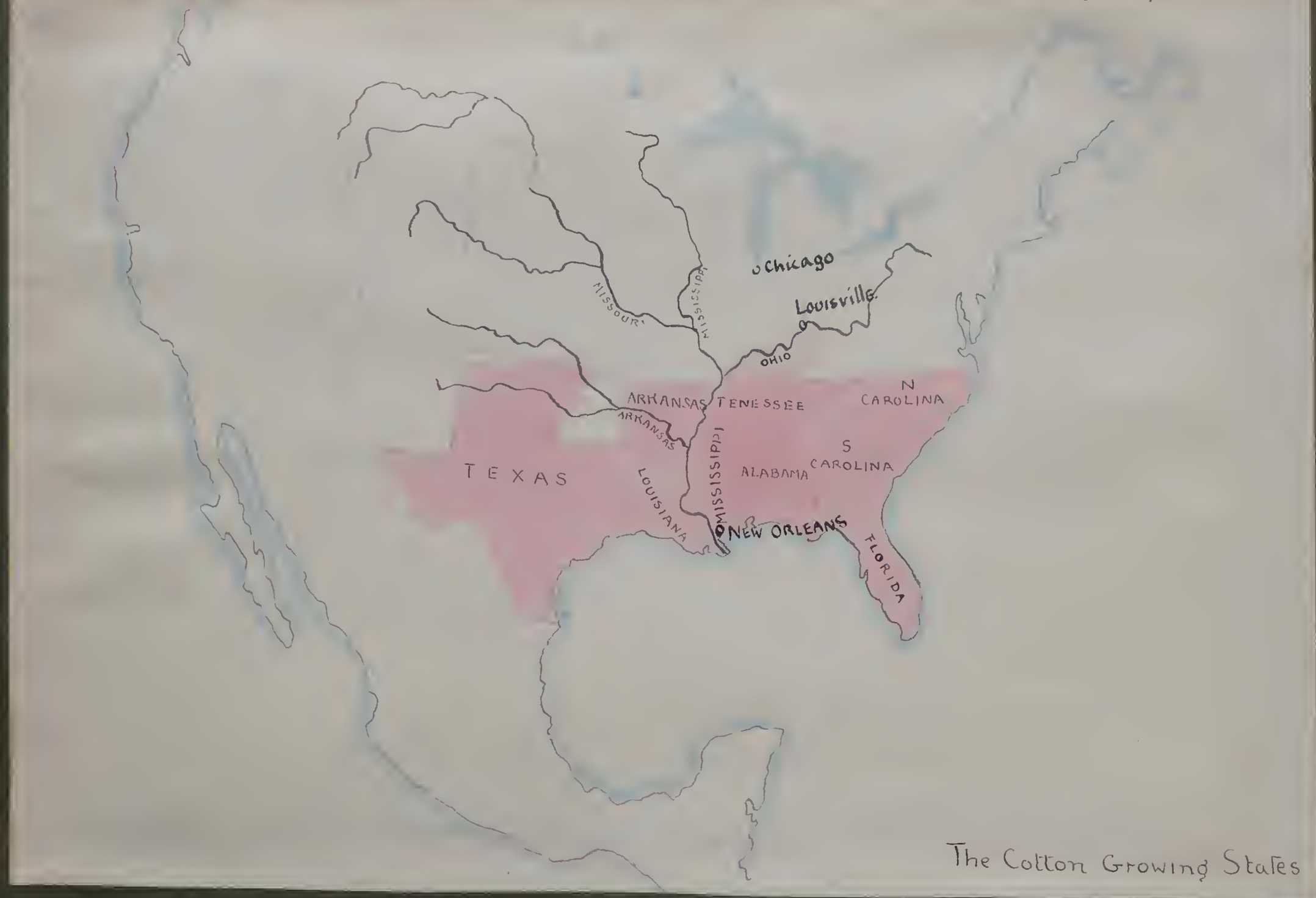


J. [illegible] (age 15)



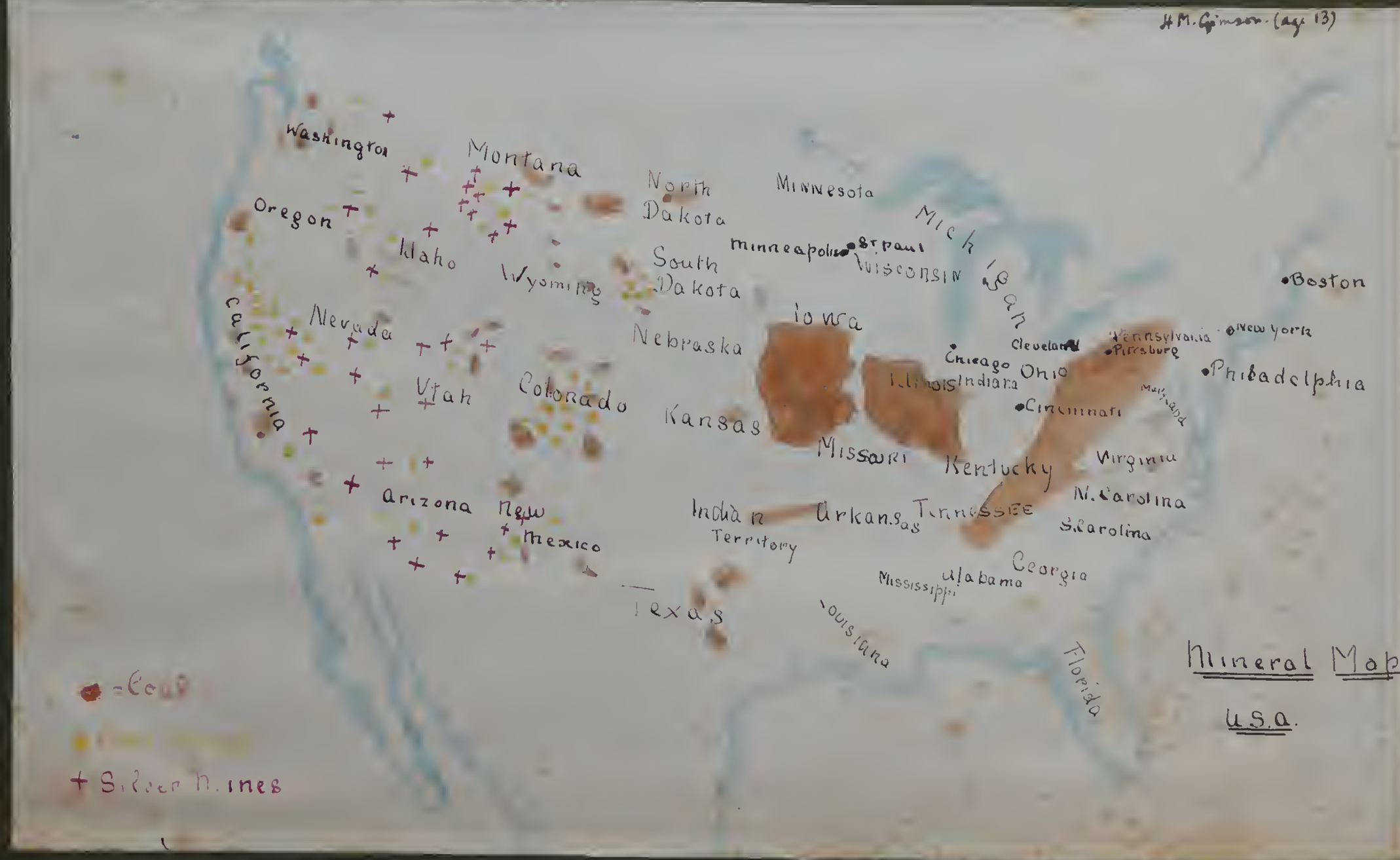
L Nuonham (age 14)

P. Montague (age 13)



The Cotton Growing States

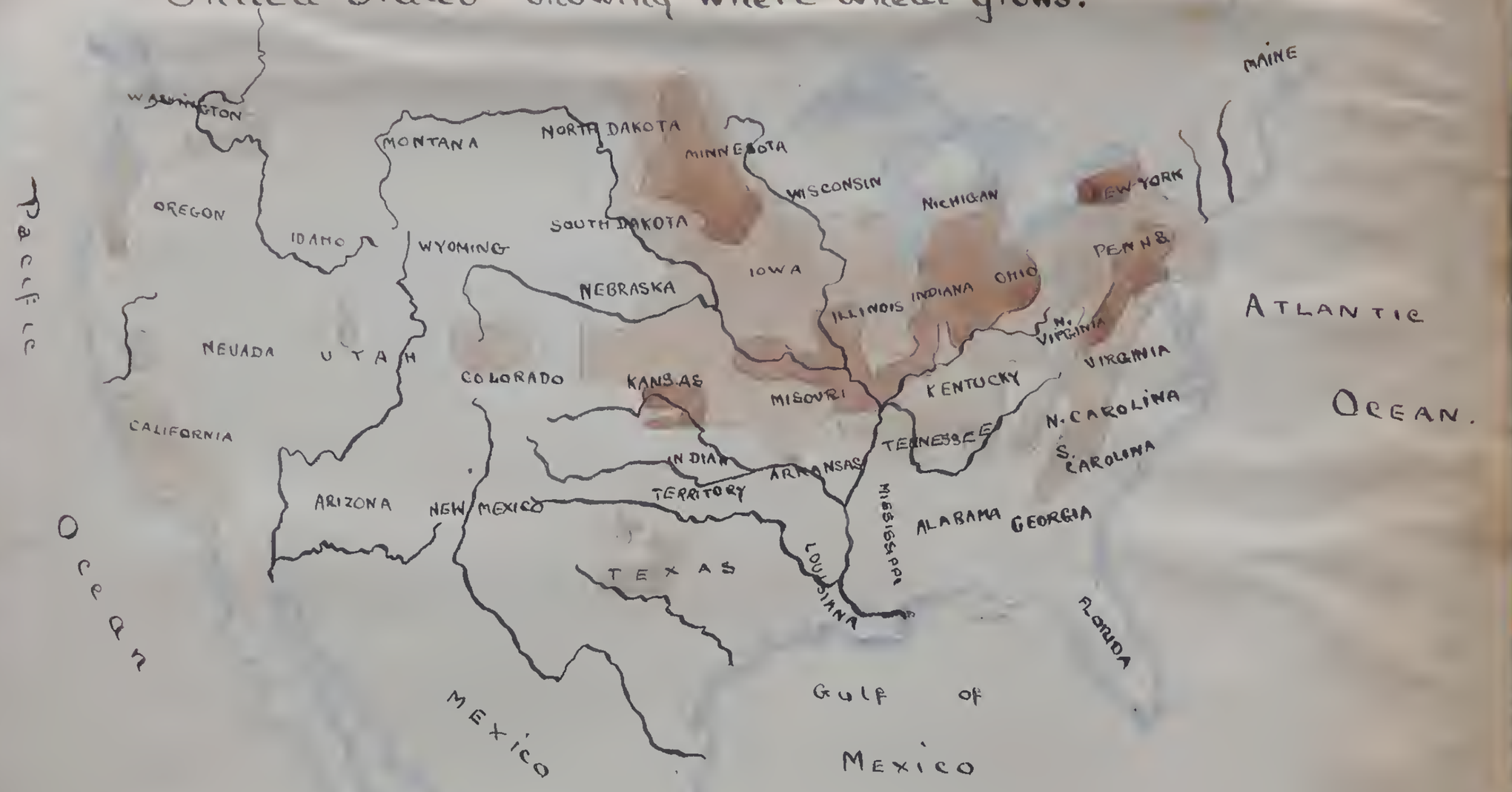
H M. Gimson. (age 13)



Mineral Map

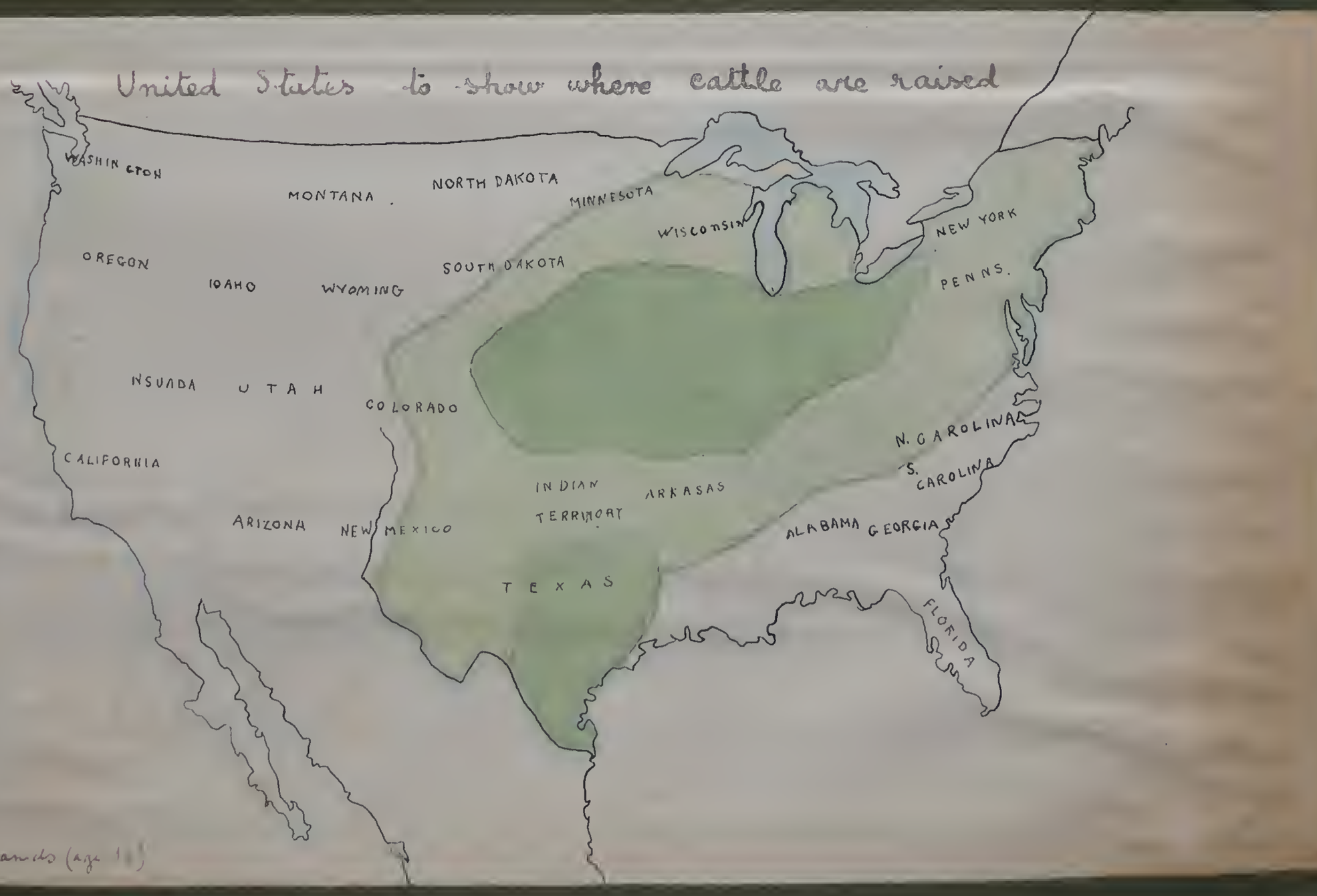
U.S.A.

United States showing where wheat grows.



Wm Fred Berry (age 5)

United States to show where cattle are raised



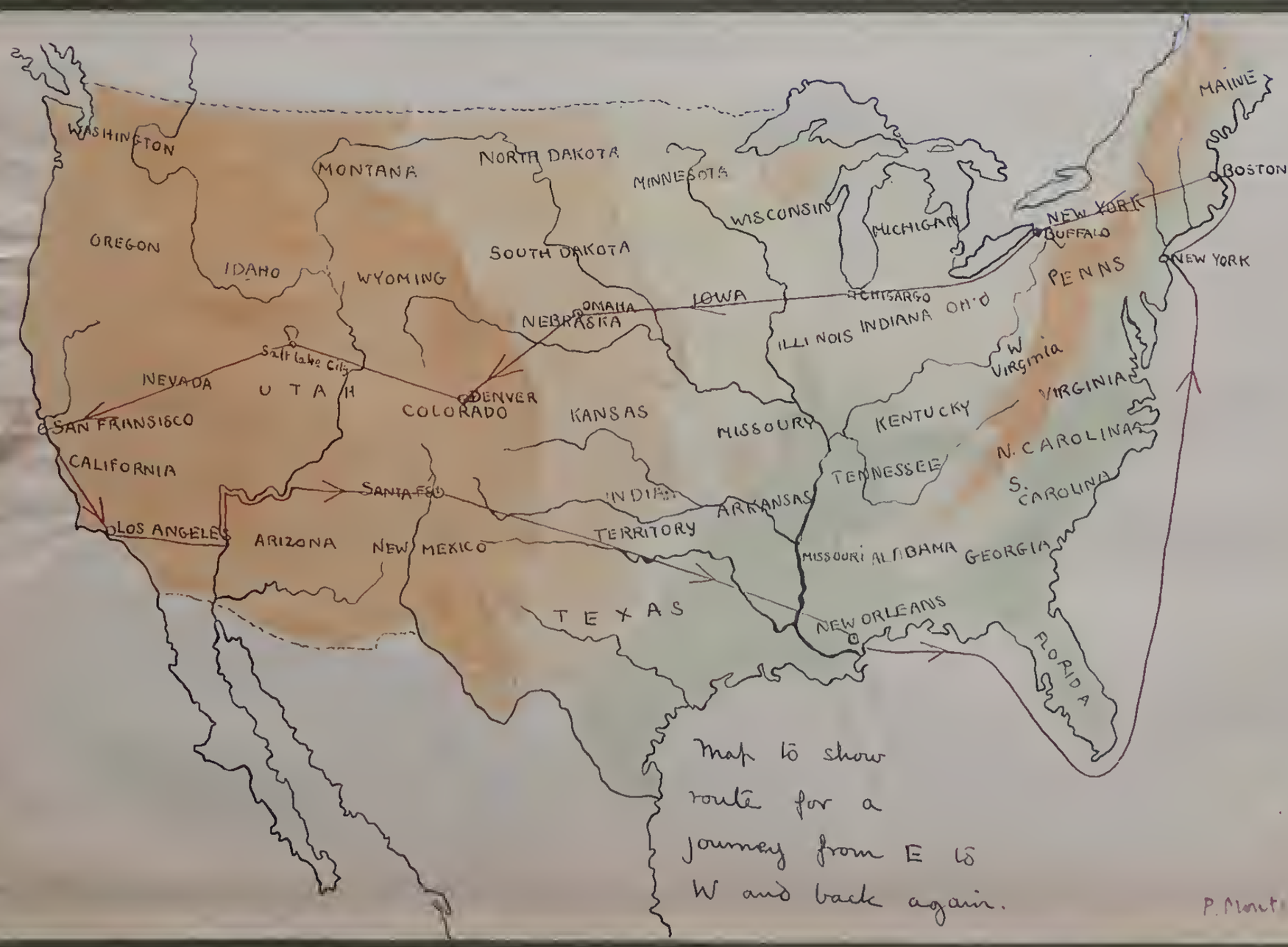
P. Daniels (age 11)

95

M. Lucke, age 16

THE UNITED STATES. RAINFALL

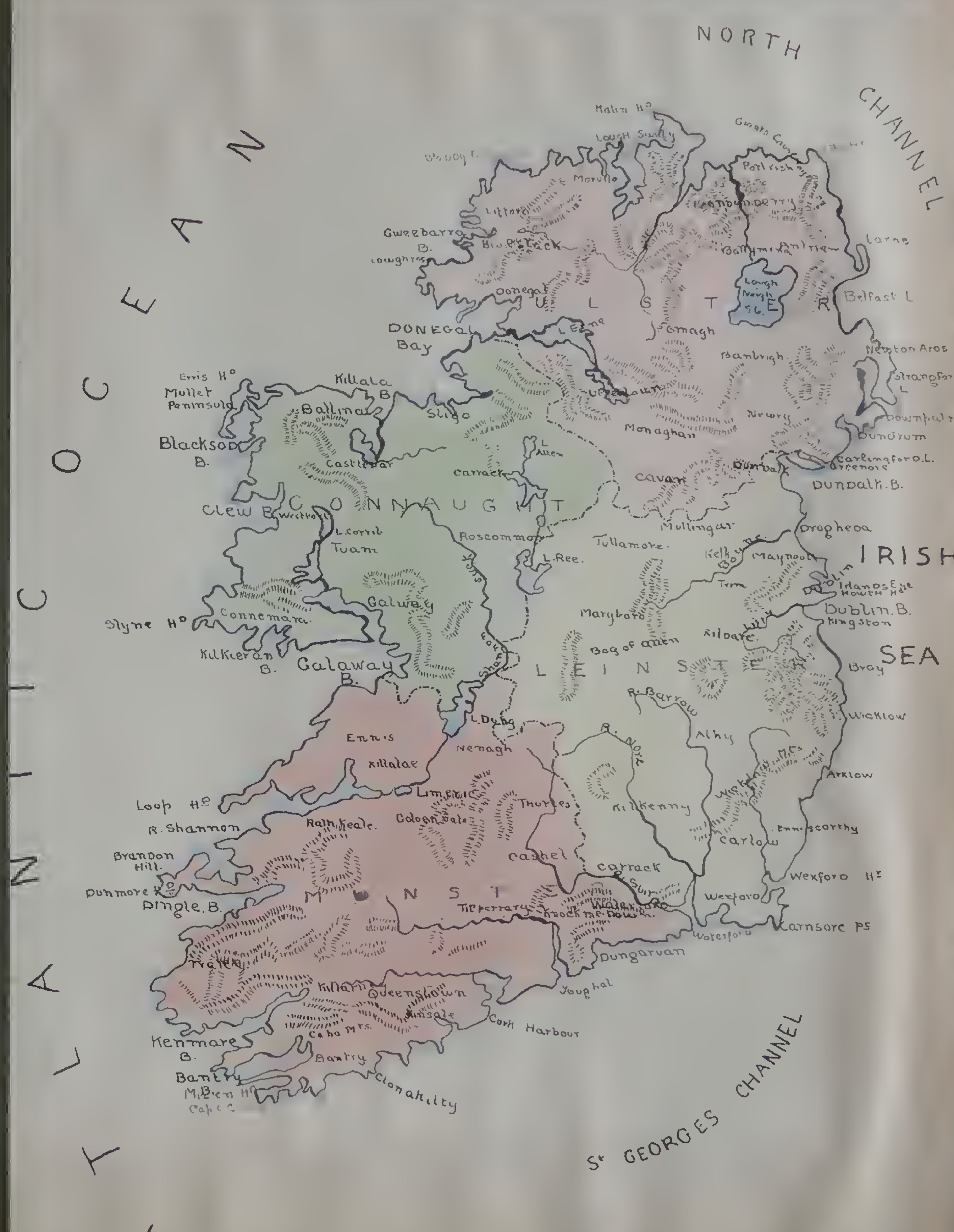
The Isohyetal lines of mean annual precipitation, expressed in inches are shown by the lines.



Map to show route for a journey from E to W and back again.

P. Montague (age 13)

Two stages of a map to show method of drawing. (Cleva Clarke, age 13).



H I S T O R Y A N D L I T E R A T U R E .

To be taught together.

These two subjects must be taught together, for each illustrates the other. The history of a period is never complete without some knowledge of its literature, for this is the expression of its ideas and aspirations, and the reflection of its social conditions; and on the other side, for a proper understanding, literature needs a historical setting.

Aim

Both must be taught mainly for the purpose of arousing interest and imagination, and so of creating a mental background of ideas and feelings. It is the drama rather than the philosophy of history that must first be presented. The study of economic problems and the investigation of the value of evidence belong to the University rather than to the School stage of education. And similarly in literature, enjoyment must be the first aim, not merely distinctions of form and the tracking of obsolete words and expressions.

Course

We divide the School course into four stages, each with its own scheme of history and literature teaching:-

a. In the Lower School, up to the age of 10, history is chiefly biography and story: the heroes of all ages and races, their succession being roughly shown on time maps. The corresponding literature consists of the great myths, legends and folk tales of different races.

b. In the lower Middle School, up to 13, a course of English history is taken, chiefly biographical at first; and some of the great books in English literature are read, from the Canterbury Tales to the Waverley Novels and Idylls of the King.

c. In the upper Middle School, up to 16, there is a course of ancient history,- Hebrew, Greek and Roman,- and some of the literature of these nations is studied in English; for example, the Bible, Homer, Virgil, Plato and the Greek dramatists.

d. In the Upper School the course covers modern history, beginning with French as an introduction to general European history, and in particular that of the English peoples. In literature, the chief periods of English literature are studied in greater detail. At certain points in the course lessons are also given in civics.

To these subjects not less than 6 hours a week are given throughout the whole School; and in the Upper School, whatever the special line of study chosen these must also be taken.

Drawings from imagination to illustrate early English history.
(Handicraft; Writing page 10).

H I S T O R Y .

Lower School. There is at present no regular course, but the lives of great men are taken of all times, drawn from the Bible, Plutarch's Lives, modern history, and especially from English history. The stories are read or told, and then retold or re-written by the children, with illustrations drawn from imagination or copied from pictures.

Middle School Lower Division. English history is now taken, divided periods which are treated with increasing fulness in the older classes. The work is still largely oral: a text-book is used for reference, and the period studied in a fuller reading book; much use is made of pictures and maps, and accounts are written out and illustrated by the children.

Upper Division. A three years' course of ancient history.

1st. year During two terms Hebrew history is studied in selected portions of the Bible. The remaining term is given to the growth of institutions, the meaning of citizenship, and comparison of different forms of government.

2nd. " Greek history, with selected readings from Herodotus, Thucydides, Xenophon, and Demosthenes.

3rd. " Roman history, with readings from Livy, Cicero, Caesar and Tacitus.

The main lines of each period are first gone through orally, and summarised on the blackboard; the period is then read up in the text-book, and illustrated from original sources, and the summary expanded in the note-books of the class, and maps and diagrams drawn. Pictures, photographs and casts are used to illustrate the time under discussion.

Extract from history note-book showing the start of my first written down and then expanded below.
(C. I. Cicero, age 13).

Events at Rome in year 53

Death of Clodius
Pompeius sole consul
Metellus 2nd consul

(1) "de vi" — riots
(2) de ambitu" — bribery
(3) de jure magistratuum
(4) Pompeius governor for 5 more years

Events in Gaul in year 52

Revolt of central Gaul under Vercingetorix
Avaricum, Gergovia and Alesia.

In the year 54 Clodius and Milo had prevented the elections in July for the consuls of the next year, and in fact they were not elected until July of that very year 53. So that in 52 there were no consuls at all; so Pompeius, after he had put down Milo, got the senate to elect him as dictator, — or rather "sole consul" as Cato would have it. He chose for his colleague Metellus. Pompeius was now a firm enemy of Caesar, and so urged on by Caesar's enemies, he brought forward laws against him, together with two others about bribery and rioting. They were:

1. The "de vi", or law stopping all the chances of there being any rioting again.
2. The "de ambitu", or law about bribery of all kinds: juries, consuls, governors, etc.
3. The "de jure magistratuum". This law was retrospective and said that consuls should not have their provinces until 5 years after their year of office as consul; and all candidates for elections must be in Rome; but Caesar should be an exception to this rule. Pompeius merely added this latter clause of his own accord, and when Caesar protested it was not passed by the people ~~so~~ so was not valid. In this way any consul before the year 55 could displace Caesar on March 1st 49, and then between that time and 48, Caesar would be a private ~~man~~ and he could then be vanished.
4. Pompeius lastly got himself elected governor of Spain for 5 years more, so that he would not be a private citizen when Caesar returned to Italy in 49.

The third law overrode all Pompeius' promises to Caesar at the conference of Lucca.

H I S T O R Y C O N T I N U E D .

Upper School Modern History. Three years course.

1st. year Outline of French history, as showing the chief lines of change from the Roman Empire down to modern times.

1st. term:- Charlemagne and the Age of Chivalry.

2nd. " The Renaissance and Louis XIV.

3rd. term The Revolution and Napoleon.

A text book is used, and the outline filled in with illustrations drawn as far as possible from the original authorities.

2nd. and 3rd. years The chief periods of European history, leading up to the growth of modern Europe, the British Empire, and America.

2nd. year From Charlemagne to the Renaissance and Reformation.

3rd. " From the discovery of the New World to the present time.

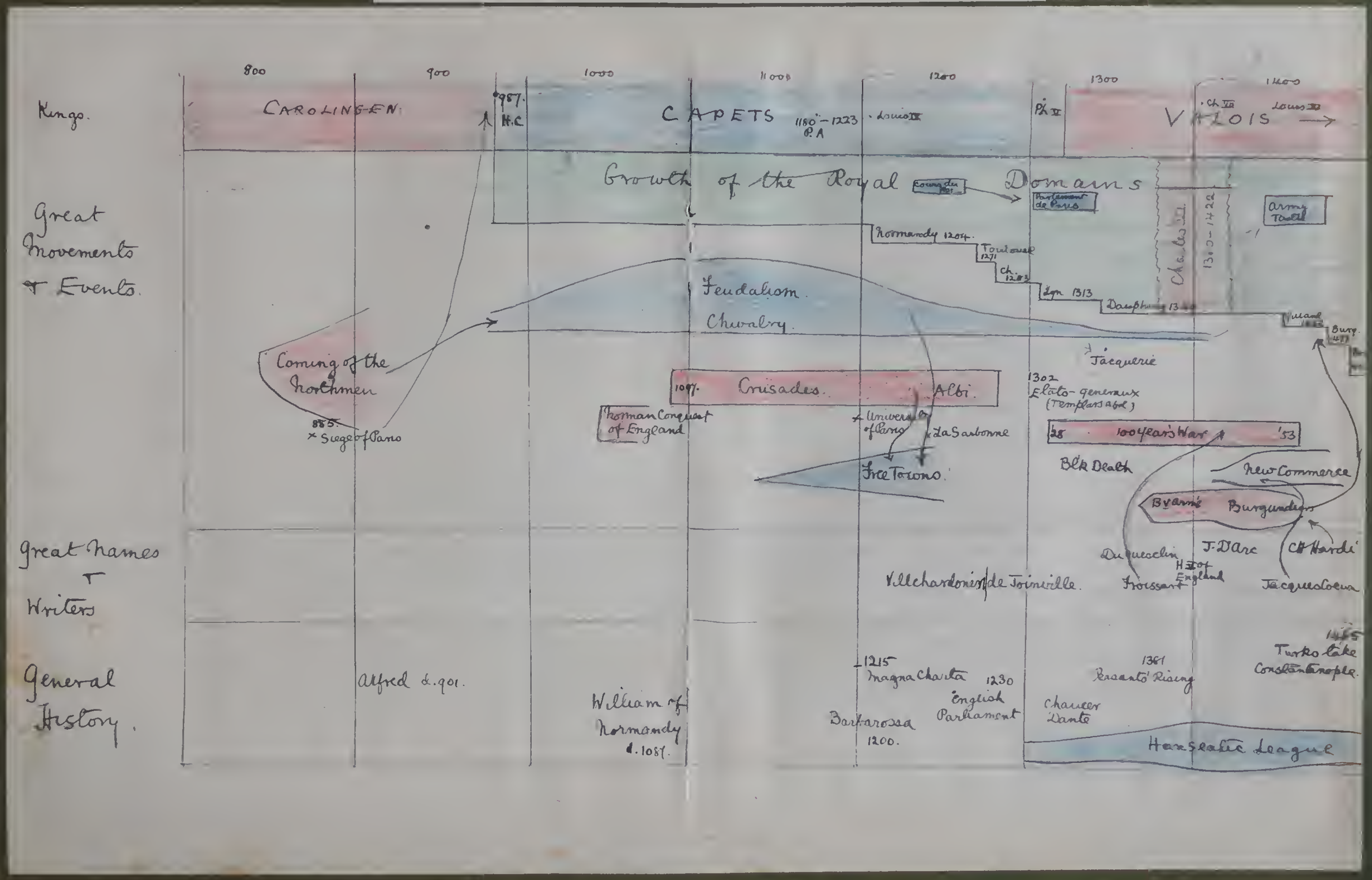
Text book.- Robinson's Western Europe.

The method followed is to select each term a book round which the main facts of the period can be grouped, such books being taken as:- Hodgkin's Charlemagne; Mrs. Oliphant's Makers of Florence; Hakluyt's Voyages; Seeley's Expansion of England; Rose's Revolution and Napoleonic Era; and Dickinson's Revolution and Reaction in Modern France.

Besides the special book, which is prepared beforehand, for the more important portions read in class, use is made of the Reference Library for private reading to supplement the class work; and short essays are written on subjects arising from it.

During these years a special study is also made of English history, from the point of view of political, social and economic changes, and the growth of English literature The text book used is Green's History of the English People.

Chart of French history. 900 1500. (P. W. Hubbuck, age 16).



L I T E R A T U R E .

Lower School. Myths, legends, and folk tales, such as the Greek and Scandinavian myths; the Odyssey; northern sagas; the cycles of Arthurian romance, and of Charlemagne and the Cid. These are read aloud to the children, who illustrate them with drawings, and retell portions of the stories. Ballads and other poems are also learnt by heart for recitation.

Middle School: Lower Division. Some of the great books in English literature are read,- as far as possible in connection with the period being taken in English history; such as the Canterbury Tales, Faery Queene, the historical plays of Shakespeare, portions of Paradise Lost, Pilgrim's Progress, Robinson Crusoe, some of Scott's novels or Tennyson's Idylls.
These are read aloud, either to or by the children, discussed, and retold, orally or in writing. Poetry is also learnt by heart, such as selections from Hiawatha, Scott's Poems, Macaulay's Lays, &c.

Upper Division. Portions of ancient literature are read in connection with the periods taken in ancient history.

1st. year. Hebrew literature. Various portions of the Bible are read and discussed as literature, especially Genesis, Deuteronomy, Ruth, Job, selections from the Psalms and Proverbs, Ecclesiastes, and some of the Prophets.
One term is given to the discussion of literary forms in general, and especially forms of poetry.

2nd. " Greek literature. The Iliad or Odyssey is read; one or two plays of the tragedians and Aristophanes; the Apology, and one or two of the Socratic Dialogues of Plato; and the speech of Demosthenes on the Crown;-- all, of course in English.

3rd. " Roman literature. The whole of the Aeneid is read, and parts of other writers; and the Lays of Ancient Rome and Shakespeare's Roman Plays studied in connection with the history.

These books are read aloud to the class; or, in the case of plays, parts are taken by the pupils. They are discussed from the point of view of literature, not of philology; and summaries made, or portions re-written. They are illustrated as far as possible by photographs, pictures, and casts of ancient works of art. Some English poetry is also learnt by heart, such as selections from Tennyson, Shakespeare and Milton.

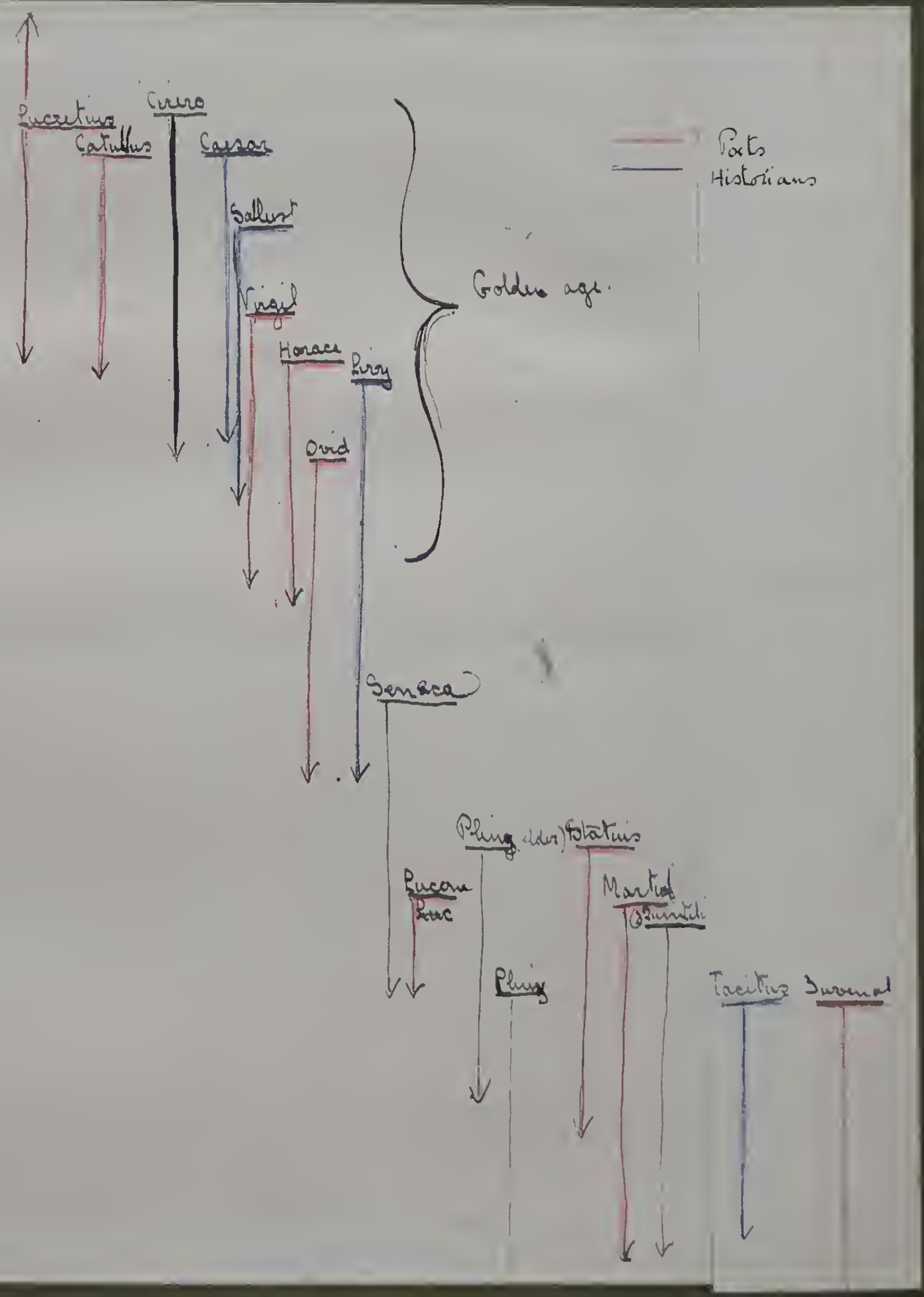
a. Similes in Virgil.

The word simile is means similar or like.
When ~~from~~ Virgil was describing some fight or something which the reader has never seen, he compares it to some thing which happens every day, such as a swallow flying or something like that. He took his similes from three kinds of life, Animal life, Inanimate life, and human life.
The first consisted of:— Boars, Bulls, Wolves Serpents, Deer, Swans, Doves, Eagles, Hawks Swallows and Lions;—the last named had hardly ever been seen by ~~Romans~~ Virgil but he was copying Homer.
The inanimate life were taken from: Forest Fires Torrents, Rivers in flood, Sea, Crag, Storm Cloud, Leaves dropping from Trees.

Those of human life were:— Dreams, a man quelling a tumult, and boys spinning tops.

b.

100	
100/30	Marius' 6th consulship
90	Sulla in East
80	Sulla dictator.
70	
60	Caesar's 1st consulship
50	conquest of Gaul. Pharsalus. Caesar's murder
40	
30	Battle of Actium
20	
10	Augustus
1 AD	emperor
10	
20	Tiberius
30	
40	Caligula
50	Claudius
60	Nero
69	Vespasian
70	Titus
80	Domitian
90	
~~100~~	Nerva
100	Trajan



From a note-book on Roman Literature.- (a) After reading Virgil's Aeneid. (b) Summary of Roman writers.

L I T E R A T U R E .

Upper School. A three years course, covering:-

1st. term. Legends of northern Europe; Sagas; Irish legends; Beowulf.

2nd. " Chaucer and Spenser.

3rd. " Shakespeare.

4th. " Milton.

5th. " The classical period. Boswell's Life of Johnson.

6th. " The Revolution. Byron, Keats, and Shelley.

7th. " Romance: with Lockhart's Life of Scott.

8th. " Tennyson, with the Memoir by his son.

9th. " Victorian novel: Thackeray; Dickens; George Eliot; Stevenson.

The work of the Upper School centres round one great writer, or at most a small group, each term; The object of the teacher is not so much to give an elaborate treatment of the subject, as to communicate his own love of the books read, and so to set the pupils reading for themselves.

The lower division read one two of the chief works of the author selected, with such occasional references to his life as are necessary in order to make this work clear.

The upper division, already knowing something of the writer's works, can take a broader and more critical view. Wherever a good life is available, this is read and discussed orally and by means of essays: especially where,- as in the case of Boswell and of Lockhart,- it gives a picture of the literary life of the period, and has a literary value of its own..

Shakespeare's introduction of humour into tragedies

In every one of Shakespeare's tragedies we always find a certain number of humorous passages. They are doubtless introduced to make the tragical parts more striking; to relieve them, as it were; like the bright sunlight which makes the shadows blacker and more sharply defined. Were these parts omitted, the play would be of the same tone all through without the numerous emotions called forth by each separate scene, which are essential to a well-written play. In every day life, too, the descent from the sublime to the ridiculous is of such frequent occurrence, that, when introduced into a play, however tragical the preceding scene may have been, instead of jarring on the beholders, and being a discord in the piece, it fits in naturally and in its proper place, without breaking the thread of the plot. Shakespeare's reasons for introducing these parts to us are very hard to fathom, when we attempt to realise what his plays would be were they lacking, and that his reasons were very definite is evident from the fact that none of his tragedies are without them, - being doubtless to make the plays seem more natural, as in real life there is never a tragedy no matter how great that is not relieved, here and there, by touches of comedy.

B. Brewster 16½.

From note-books on English Literature.

Scott as schoolboy & student

Scott began his education at Edinburgh High School but owing to his delicate health as a boy he was at first rather behind the rest of his class.

This, according to his own account of his life there made him inclined to be idle & inattentive but in spite of what he says he seems to have made considerable progress in his studies - particularly Latin - before the time came for him to leave. He was extremely popular with his schoolfellows & though his lameness prevented him from taking much part in any outdoor games he had an inexhaustible stock of stories with which he used to delight an admiring audience in the winter playhours. On leaving the High School Scott spent 6 months at Kelso & afterwards returned to Edinbro' where he went to college. Here again he does not seem to have made the most of his opportunities & refused entirely to learn Greek; - a resolution which he afterwards deeply regretted. Almost the only thing Scott studied at this time was the Law & in this he made such progress that he was successful in two examinations in 1791 & 1792.

H. J Sambrook.
aged. 17.

Sir Walter Scott's Early Literary Tastes.

Scott's early literary tastes were inclined, as he himself tells us, to the wonderful and terrible in stories, rather than to passages expressing milder and more worthy sentiments. As a boy he used to delight in reading through old ballads and lays, and he even went to the trouble of learning many of them by heart. A great favourite of his early days was the ballad of Hardyknute, as were also the more exciting passages in Pope's translation of Homer. So great was his love for stories of chivalry and ancient ballads, that throughout his whole life it never deserted him. The outcome of this enthusiasm was the Border minstrelsy and some of his original poems on the one hand; and many stirring battle scenes from his novels on the other.

B. Simson. aged 15½

GENERAL OBJECT OF HAND WORK.

The value of such work lies primarily in the training that it gives in observation, and in the co-ordination of hand and eye, and the control of the muscles; and secondarily, in its utility in various careers and professions, and in the everyday affairs and interests of life. It is the chief outlet for the creative instinct in children, giving opportunity for self-expression in objects of actual use. It affords a healthy variety of occupation, and relaxation from brain work; and it is the only substitute for those lessons in the actual work of the home, which have always been the best part of a child's education, but which are now, through changed conditions, largely ceasing to influence the child's development. Such a training is not to be left to chance, or to voluntary effort alone. The greater part of the manual work is a regular part of the School routine. It falls into four main divisions:-

1. Woodwork and metal-work classes for boys, with corresponding classes in cookery, sewing, &c. for girls.
2. Outdoor work, mainly gardening, for both boys and girls; with dairy work for the elder, and option of other farm work, poultry and bee keeping, &c.
3. Drawing.
4. Optional handicrafts, such as modelling, basket [illegible], book binding, carving, &c.

Clay-modelling. (Lower School).

Woodwork. (Middle School).

W O O D W O R K .

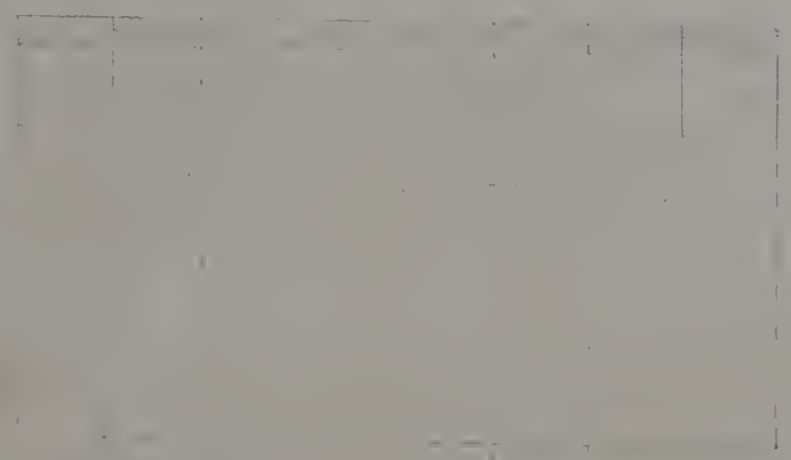
For the youngest children, that is, under 10 or 11, whose hands are usually not yet strong enough to manipulate tools, and who cannot do enough with wood to get any satisfaction out of it, there is a preliminary course in clay modelling. After this age, the boys go through a regular course of woodwork, consisting of a series of exercises so graded as to introduce in order the chief woodworking tools. The first series of exercises must be worked before the making of a model is allowed. They consist of sawing, planing, vertical and horizontal paring; and require the use of tenon saw, plane, square, marking knife, and chisels of various sizes. After these exercises, models are introduced containing various joints, the joints being worked first as exercises. After these have been gone through, the boy is encouraged to plan and work out his own ideas. Before any model is made, it is drawn to scale, and the drawing used to work from. This course is continued up to the age of 15 or 16, and from 1½ to 3 hours a week are given to it in each class.

Exercises involving the use of striking-knife, try-square,
tenon saw and firmer chisel. Drawing ~~of~~ by H. K. Ginson, age 13.

P. L. Bryant (age 14)

Models involving use of shooting-board for different angles, and practical application of joints already learned.

Drawings (scale reduced), by P. L. Bryant, age 14.



Models involving additional tools.

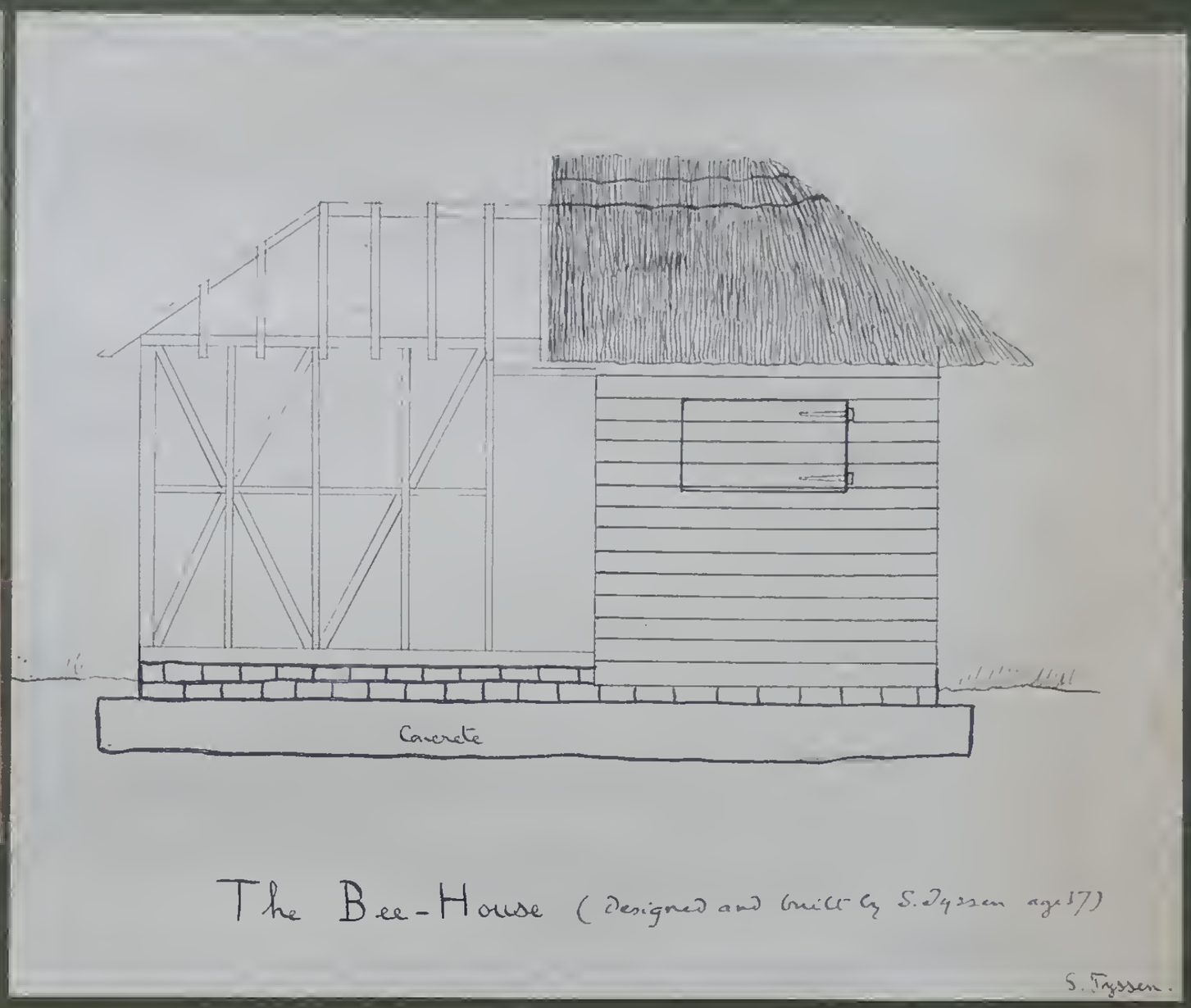
WOODWORK CONTINUED.

In the older classes a good deal of real work is done in the way of games and laboratory apparatus, class room and workshop fittings, and such larger work as from time to time is required for actual use,- beehives, bee-house, sheds, cricket pavilion, &c, scale drawings being in each case previously made to work from.

Besides this class work, the workshop is open for voluntary use in free time, and prizes are offered for apparatus, &c, required in the School, if it is made in a boy's free time, and reaches the required standard of workmanship. For specimens of apparatus so made, see the illustrations to the section of Head Work dealing with Science.

METAL WORK.

In the Upper School metal-work is an alternative to woodwork, or taken in conjunction with it, and consists at first of a series of graded exercises, such as drawing out hot iron, bending both cold and hot bar and sheet iron; and the use of the file, cold chisel, and drilling machine. At present we are engaging the use of the local forge for this purpose on certain afternoons; when we have fitted up our own engineering workshop, we shall proceed to the making and fitting of working machinery.



The Bee-House (Designed and built by S. Tyssen age 17)

S. Tyssen.

C O O K E R Y A N D S E W I N G .

The wood and metal work above described are taken only by the boys. In place of them, the girls give the time to household work. The cookery lessons are graded to teach the use of materials, utensils, oven, &c, and the general principles involved. Once a week one of the classes in rotation prepares a meal for the whole of the girls' house.

Sewing includes not only all a girl's necessary mending (for which additional time is found) but graded lessons teaching different processes and the use of different materials, and so leading up to regular dressmaking. Prizes are offered for good work in dressmaking done in the girls' own time.

Besides these branches of handwork, for boys and girls alike there are certain household duties taught and supervised, either daily or at fixed times each week. All for instance make their own beds; brush and clean their own clothes; boys above a certain age clean their own boots; instead of this, the girls take various household duties in rotation, such as the tidying of rooms, laying and clearing of tables, &c, in their own house.

G A R D E N I N G .

The [illegible], which affords opportunity for study of the living plant, and is the observation [illegible] class [illegible] is divided up into:- type botanical border; type vegetable and cereal border; ornamental border; a number of [illegible] botanical plots; an orchard; a nursery; and a plot of experimental ground. Here all the boys work for two or [illegible] each week, and are able to watch the birth, life, and [illegible] of plants. Here they can see the most important plant families, and can learn how vegetables and cereals are cultivated. Here opportunity is afforded them of studying how to graft, prune, and train fruit trees; and how to rear young trees and plants from seeds, layers, and cuttings.

In the experimental plot plants are grown under favourable and unfavourable conditions, in different kinds of soil, at different depths, crowded together, or dotted about singly, in ground which has, or has not, been manured, dug, or weeded; and the results are recorded.

Those who wish may also have a private plot of their own where they may make their own experiments.

The school garden has been entirely laid out and levelled by the children in the last two years. In order to prevent treading on the plots while working, the ground has been divided into small beds, with narrow paths between. By this subdivision a large number of children can be usefully employed, and their work supervised,- which is very difficult if the beds are large. We have found the most convenient size for the beds to be from 3 ft. 6in. to 4ft. wide, with trodden [illegible] or [illegible], 15-18 inches wide, between them, edged by borders of turned wood.

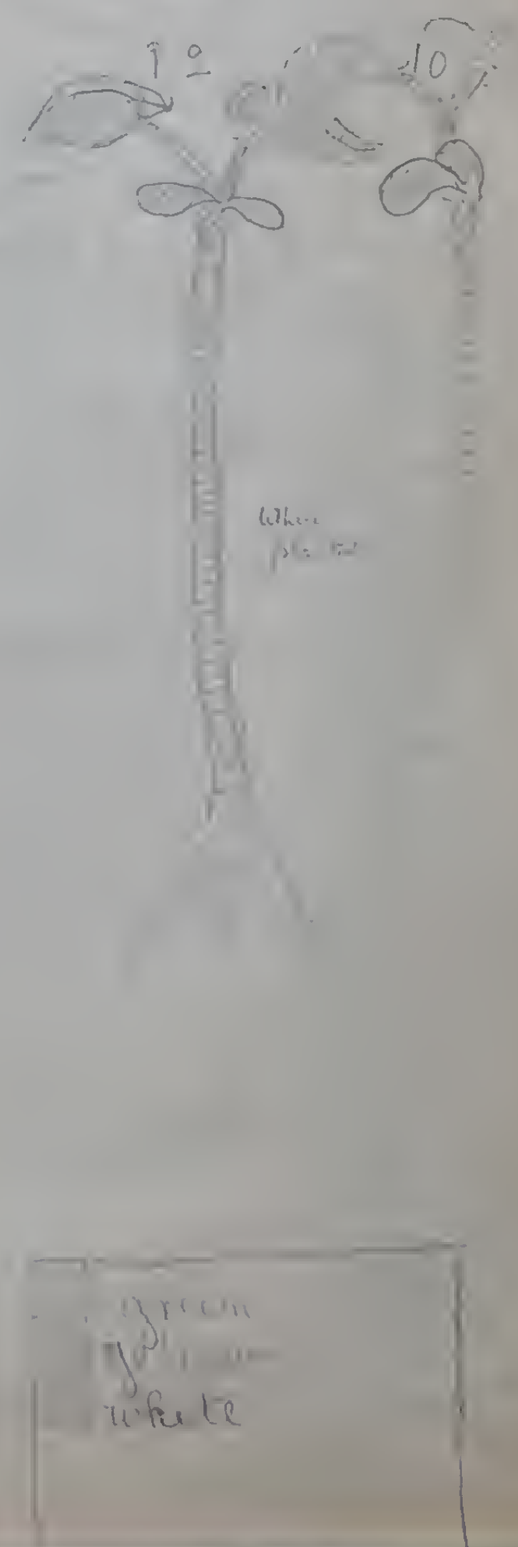
SCHOOL GARDEN.

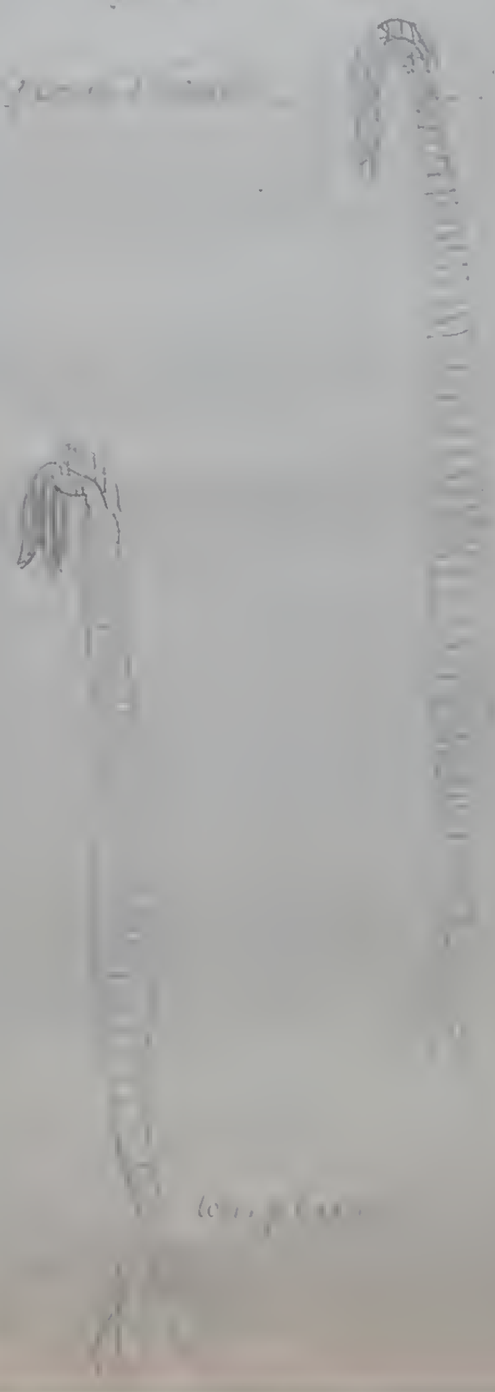
S.W. COFFIN. AGE:- 13yr. 2m.

SCALE:- = 3 in. = 1 Chain.

J. Hawtaine (age 11) Experiments with bean seeds.

Appearance of 1st leaf 14 days
16 days



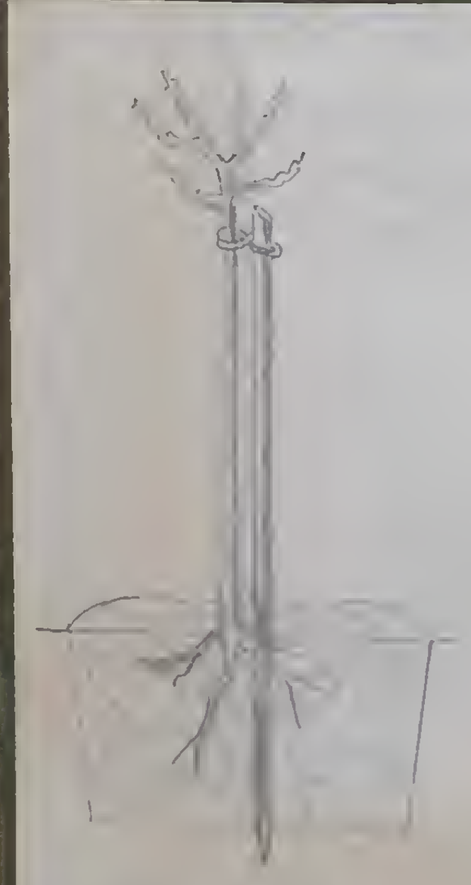


green yellow white

The younger children work in pairs, each pair having a plot of their own measuring about 3ft. by 20ft., which they cultivate - partly according to their own fancy, and partly according to the instructions of the teacher on some fixed plan, which is the same for all. This enables the boy to see how his work compares with that of others, and to find out why he has failed where another has succeeded;- and moreover, stimulates him to do better work; for it is doubtful whether he will work merely for work's sake so well as he will if there is a chance of comparing his work with something similar elsewhere, finding out whose is best. The part which is cultivated as the owner chooses is used by some for growing mustard and cress, radishes, lettuces; by others, for flowers; while others plant small forest trees, either reared from seeds, or dug up on excursions; or else turn their plots into little orchards.

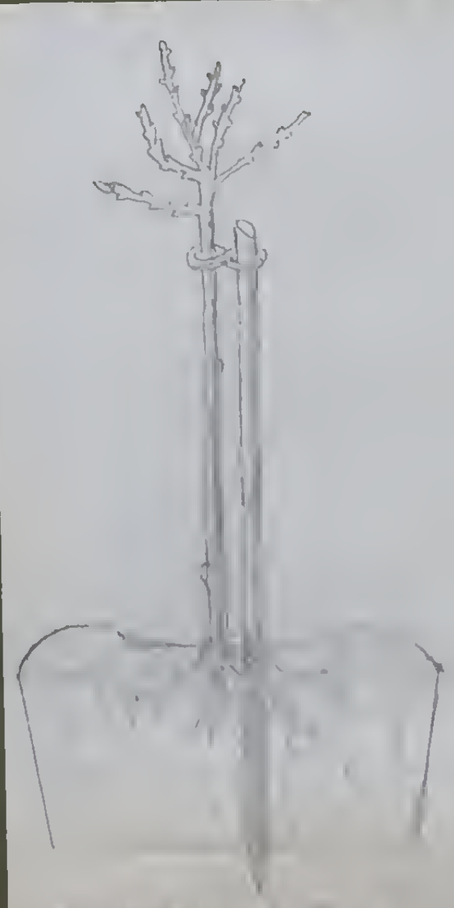
Some of the older children have charge of the 200 fruit trees in the orchard, which affords work all the year round. Scions and young seedlings are raised from pips and grafted with scions cut at pruning time. All the summer and winter, pruning is done by the boys under the superintendence of the teacher. The various diseases which occasionally break out have to be treated; and the children often rear the caterpillars they find, watch out the moths, and thus work out the life-history of the insect-pests.

Cutting the grass round the young trees; hoeing the ground hoed; watering; looking to bands and stakes to which the trees are fastened; tarring wounds after pruning; spraying from time to time to kill blight and fungoid pests,- give constant employment.

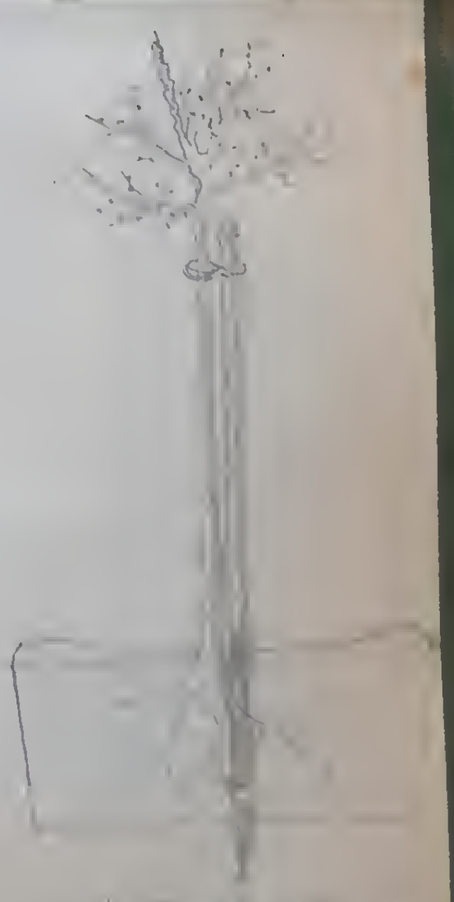


Wrongly Planted Tree.

Wrongly Planted Tree
After Pruning the
Roots.



Rightly Planted Tree.



Right's Planted Tree
in which the roots
have not been

The oldest boys and girls have charge of the different sections of the School garden. Two of them look after the botanic garden; another has charge of the ornamental part; two others of the vegetables,- and so on. And when the younger children have done the allotted work in their own plots, they are sent to help the various heads of departments in the School garden. At other times, when there are special jobs to be done, they are divided into squads, under older boys,- who thus learn how to organise work, and direct others.

Besides the actual work in the School garden, there are the playing fields and tennis courts &c, which require attention. Rolling or watering, cutting thistles, mowing, marking, spudding plantains, and picking off flints -- afford constant occupation, if there is a dearth of other work at any season.

A large shed is now being built by the boys, as a place for potting, making garden-baskets, and other similar occupations at times when the weather makes outdoor work impossible.

DAIRY WORK, FARM WORK, &c.

Out of the time assigned to this outdoor gymnasium, is taken time for dairy work. This occupies two afternoons a week, and is under the sole charge of two senior boys or girls, who take it in turn, having each day two younger ones working under them. These are drawn from one class only, the members of which take it in rotation. The cream is separated mechanically, but they do the whole of the churning, the working and making up of the butter, and the cleaning of the implements used.

Those older boys who so wish may in place of gardening take farm work. They help morning and evening with the milking, and in the afternoons join with whatever work is going on upon the farm.

Making up the butter.

Churning.

All in the upper part of the School take part in the haymaking in the summer term, the whole or part of each afternoon being given up to this purpose. Certain classes also go into the hay field in the morning, if required, instead of their usual work. All such work is not intended only for those who will take up farming, or colonial life: but, as above explained, is regarded as at once a healthy relaxation from class work, and as having no small value of its own in promoting self-reliance, wider interests, and a healthy feeling towards all manual work.

E T T E T P I T C, &c.

Others can give part of the gardening time to bee-keeping, learning all the necessary operations in the school bee-farm,- such as driving, hiving, feeding, and extracting the honey.

Those who wish can also keep private hives for observation and experiment and profit.

We are now extending the same principle to the poultry-farm, dividing it into sections under the charge of such boys and girls as wish to undertake the work

D R A W I N G .

Aims. Our aims in the teaching of drawing are:-

1. To train the children's powers of observation.
2. To give the manual skill necessary for the expression of their ideas.
3. To train and develope imagination and individuality.
4. To store their minds with impressions, and to train a sense of beauty in form and colour that shall add to their delight both in nature and in art.

Methods. 1. Observation is trained:-

a. By memory drawing. With the younger children these drawings are executed chiefly in chalk on the blackboard, and the subjects are chosen by themselves. Drawings from natural objects and from models selected by the teacher are also treated in the same way. Later on, this kind of work is executed in pencil.

b. By drawing from nature. Studies are made in chalk, water-colour (brush-work, as it is usually called), pencil, and charcoal. The subjects range from the simplest leaves berries &c for the youngest children, up to landscape work, and drawing from the life, with the older.

Class Drawing.

MOLLY - ROUNTREE

AGED 9.

Brushwork studies in the Lower School.

2. Manual skill is trained:-

a. By blackboard drill. A part of every lesson is given up to free arm drawing on the blackboard,- the object being to train the children to draw from the shoulder rather than from the wrist and fingers; and also to give them the power of drawing good lines automatically. It is essential that in the expression of an idea the child shall not be hampered by inability to draw freely. The hand must therefore be trained to be the ready servant of the brain. This work is one of the ways in which design is begun.

b. By constant practice in trying to express their ideas graphically. At such times they are allowed to draw freely, in their own way; not forced to hold pencil in a given position, and so forth.

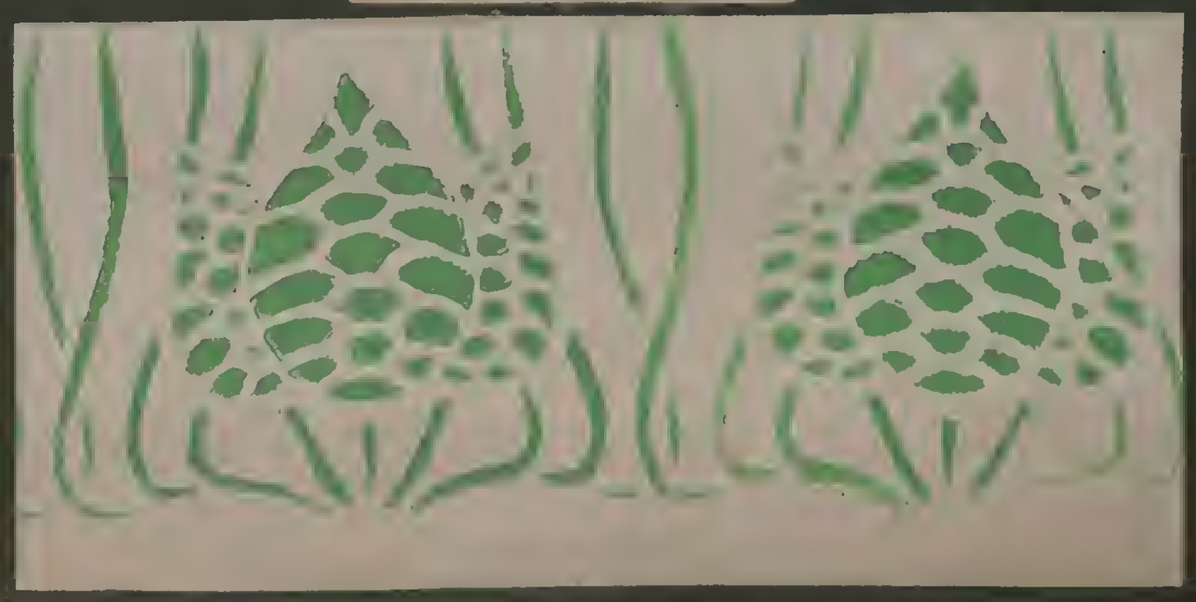
Studies for block-printing.

3. Individuality and imagination are trained:-

a. By frequent practice in design. It is impossible for any child to make an original design without calling into play the inventive powers; and the more practice is given in this direction, the more will the individuality be strengthened. Design for this purpose need not necessarily be decorative. All planning upon paper serves this end.

b. By illustrating stories read. The illustration of tales, especially of historical tales, calls out the power of imagination. The facts, as far as they are known, must of course be adhered to; but imagination is needed even to visualise facts that are not present, or no longer existing.

Study of fir cone.



Design for stencil made from it. (Stella Cobden Sanderson, 1901.)

The sense of beauty is trained chiefly by decorative design, this branch of the work being found to be one of the most helpful in teaching children to appreciate beauty in form and colour. As far as possible it is taught in connection with some handicraft actually being followed by the children,- such as carving, wood-carving, pottery, weaving, embroidery, or basket-work. In teaching decorative design it is of the first importance to show that not only must the laws of proportion, symmetry, and so on, be observed; but also that ornament is not something to be added as an afterthought, but should grow from the nature and requirements of the material, and the use to which it is to be put.

In the autumn and spring terms the older children study form by making careful copies in light and shade from casts. In the summer term this gives place to water colour sketching out of doors.

Course. Drawing is taken by all under 15 or 16; after this age it becomes optional. The progression of the work in this general course, from the youngest classes upwards, is, roughly speaking:- modelling; colour; mass (light and shade, that is); line; followed by more advanced work in light and shade, colour and modelling for the older children.

Mathematical and mechanical drawing is not included in this course, but is taught in connection with class work in mathematics and mechanics.

Sketch from nature. (D. Kinnell, ... 15)

Pen study from life.

(H. Smith, aet. 15).

Pencil study from life.

Charcoal study from life. (D. Vinnell, age 15).

Study of nasturtium, and design made from it. (L. Lake, age 16).

Study of nasturtium leaf design and flower. (See page 141).

Stuartia (Stella Cobden Sanderson ... li).

Stella Cobb Anderson (age 16)

Artwork studies.

Autumn Garden. (Stella Cordata-Sanderson, age 17).

Memory drawing. (A. F. Roberts, age 13).

..emory drawing:. Original. (F. ..oreno, age 17).

EVENING OCCUPATIONS.

All the foregoing branches of handwork are taken mainly in the afternoon. In the evening there is no regular class work after 7.30 o'clock,- the seniors giving the time to private reading in connection with the history and literature lessons, or to meetings of debating or scientific societies, &c. For all below the Upper School three evenings are set apart for some form of handicraft, in which there is considerable range of choice. The younger boys have to take sewing on one of these evenings. On the others both boys and girls can take bookbinding, woodcarving, basket-plaiting, modelling, weaving, and so on.

Bookbinding consists at first in learning the use of paste, scissors, knife, &c: in mounting pictures; and mending, cleaning, and preserving books. They then go on to binding in leather and simple tooling. This work can be continued in their free time.

In woodcarving the Swedish method, with which we began, proved too narrow in its scope. We therefore follow only relief carving, which cannot be begun until the fingers are strong enough to use the tools with safety. For this work the children have to make their own designs, and it is of course frequently connected with the afternoon work in the workshop. Basket plaiting is taught to all the younger children as part of the afternoon handwork: when they are promoted to woodwork they can still keep it up in the evening, and proceed to more elaborate work.

The kind of class modelling usually taught - imitations of fruit and other natural objects - we have almost entirely given up as inartistic and unsatisfactory. We employ modelling rather for purposes of design,- as a preliminary stage, for example, to woodcarving,- or in the modelling of pottery, which can be sent to a neighbouring factory to be fired.

Weaving has recently been introduced as an evening occupation, the children constructing their own simple looms for the purpose.

Embossed leather work, block printing, and bird stuffing have also at different times been included in these evening occupations.

DESIGN FOR A LEATHER BELT

Bookbinding.

Basket-making.

Weaving in Cardboard. (Colour Harmonies, No. 11).

P. Brewster (age 13)

P. Bryant (age 14)

Stella Cobden Anderson (age 17)

E. R. Buckell (age 14)

E. R. Buckell (age 14)

G. Hubbuck (age 13)

Muriel Lucas (age 11)

NATURE-STUDY.

Much that should properly come under this head has already been described under other headings, such as Science, in the section devoted to head-work; and gardening and drawing, in the section devoted to hand-work. It remains to speak of other branches of Nature-study, to which we give a considerable amount of time; partly in the form of outdoor class work; partly of voluntary, or semi-voluntary, pursuits undertaken in free time.

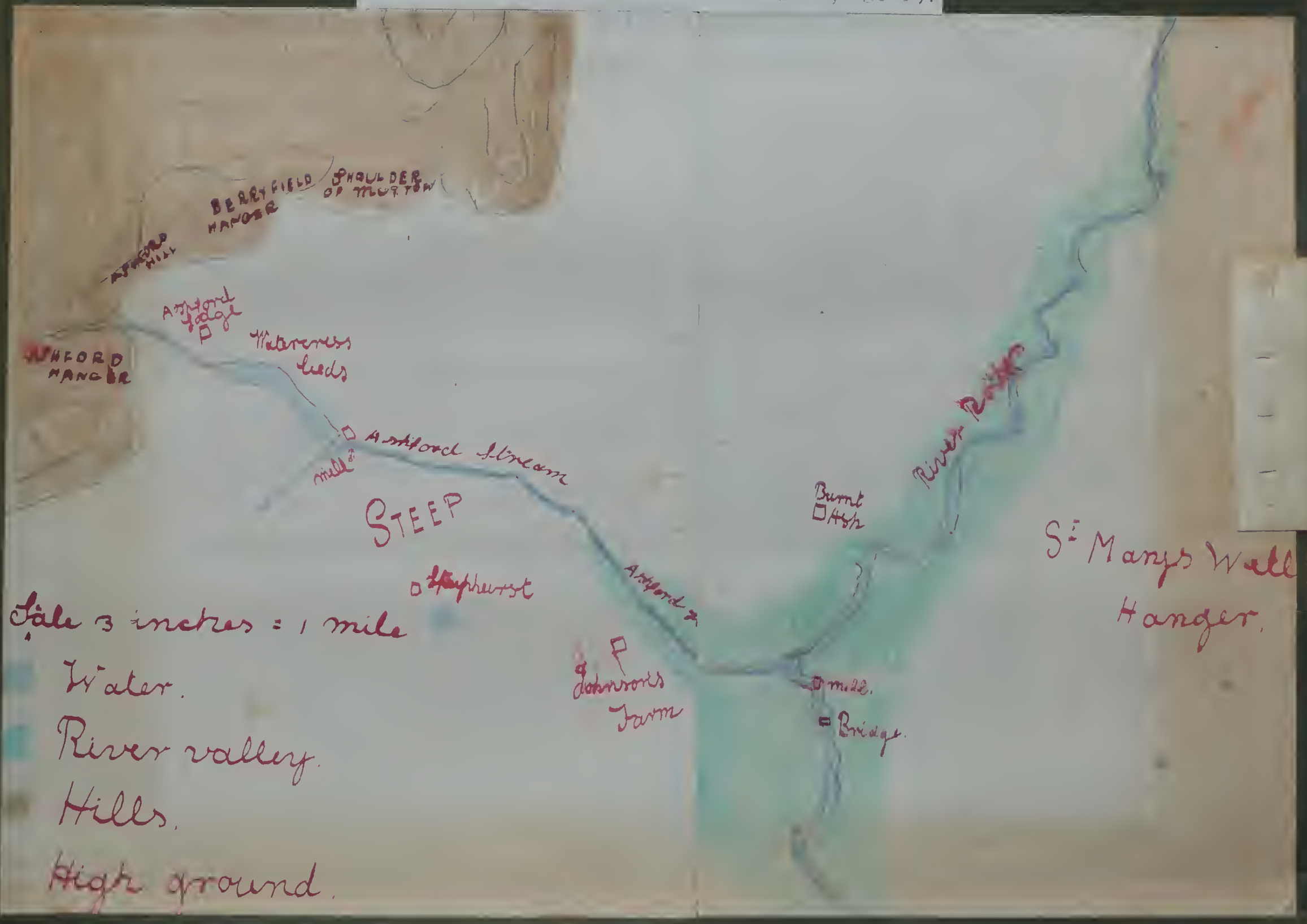
The first of these may be called topography, which we include in the general curriculum for the following reasons:-

1. It forms the best introduction to the wider study of geography.
2. It gives reality to the study of mathematics. A child who has done some practical surveying does not experience the usual difficulty in realising what an angle is; and such surveying gives opportunity for the practical application of trigonometry.
3. It is a good training in accuracy of observation. A whole map may be put wrong by a piece of careless observation, and so a mistake never fails to be obvious to the one who has made it.
4. Not only is it useful in the practical professions, but it also developes the power of understanding the lie of the land, which has much practical value, as well as adding to the interest of travel.

In the Junior School, in addition to the teaching of the elementary notions of geometry, the making of plans of the class room, garden plots &c, the children are taken every week for a natural history walk, in which the object is not only to bring back specimens of interest to study in the class room, but still more to visit in succession different parts of the neighbourhood that best show natural features and the agencies at work in shaping them. They notice the trees and plants that grow upon the downs or by the river; the different kinds of soil, and the crops growing upon them; they follow the course of the stream, and note the reasons for its widenings and the results of its action; and ask themselves questions that can only be fully answered by later work. Rough maps are made of the parts thus explored, and the walks traced upon large scale Ordnance Maps which are gradually coloured in from their own observations.

Natural History Rambles. (Lower School).

Sketch-map of a stream. (J. Thompson, age 9).



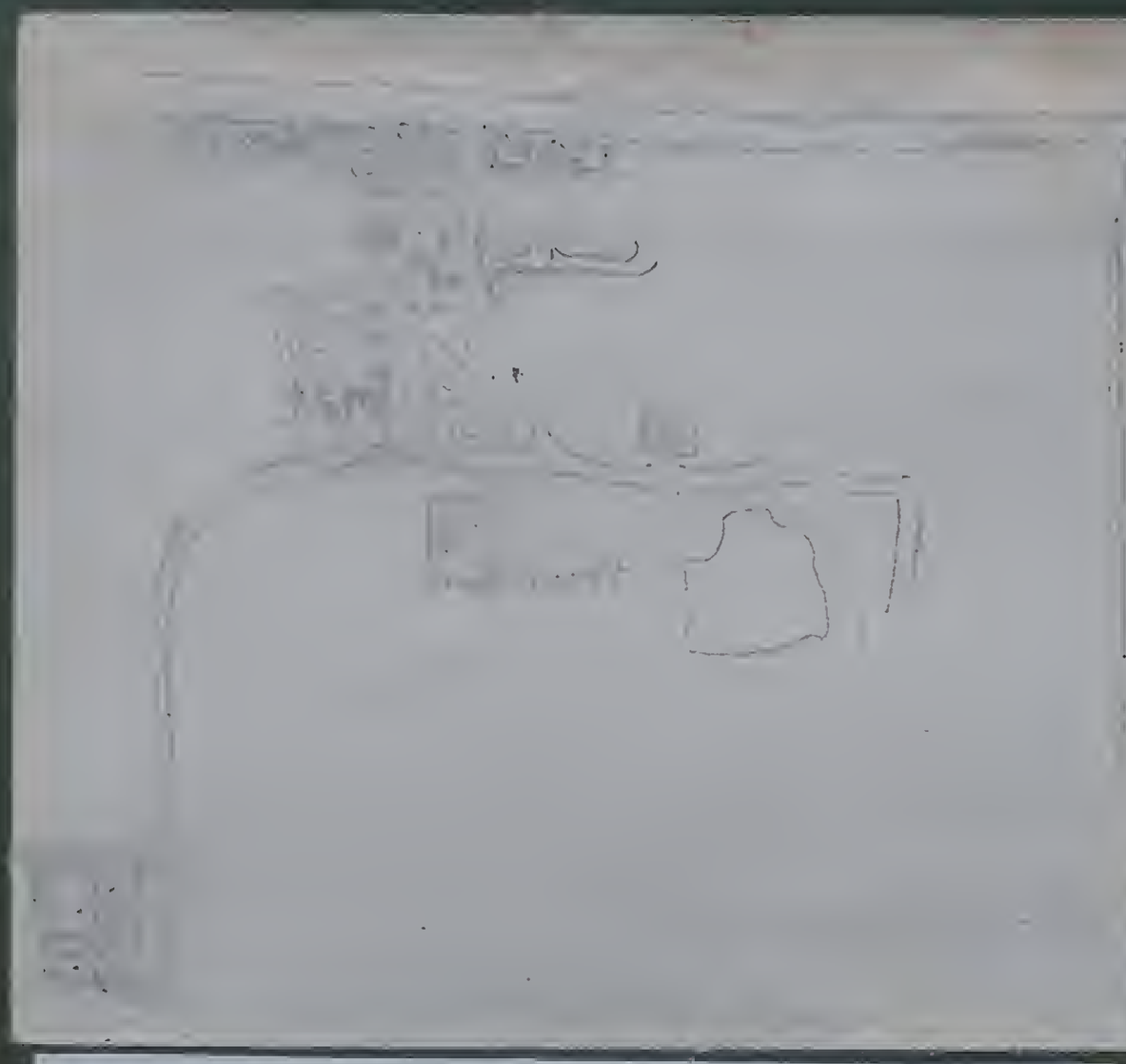
MATHEMATICS: SURVEYING.

Outdoor work. A more definite course of surveying, beginning with locating points by finding the direction and length of given straight lines. The class is taken to a point in the middle of a field; the children observe the directions of its corners by means of a "Military" prismatic compass, and then measure the distance to them with a surveyor's tape. These observations are written in a note book carried by each for the purpose. In the class room afterwards they mark a point in the middle of their paper, and by drawing lines from it in the directions noted, and of the recorded length according to a scale fixed upon for convenience, they locate the corners of the field on their paper. By joining these points, and filling in details from observation, a simple map is made.

The same process is afterwards applied to a large tract of country, prominent landmarks being observed, and distances estimated by comparison with some visible and known distance,- such as that from the School to Petersfield.

To teach the use of technical signs, when the first map of a field has been made in the manner above described, the paper is pinned to a board, and taken out to the field again, where the children fill in as many details as possible, inventing their own signs for the different things noticed. It is soon evident that it is better to have one code of signs: and so those found on the large scale Ordnance Map of the district which hangs on the class room wall are used.

Indoor work. As it is not possible to do much work out of doors during severe weather, a good deal of time during the winter is spent in making models of the surrounding country. These are first made on a large scale in sand, upon the floor of a shed. After some practice in modelling the country as it appears to them during their walks, the children try to get more accurate results by using a large scale map in which the height of the ground is indicated by colour. When the surface is modelled, it is covered with different kinds of moss to represent the downs, woods &c: and buildings are added in clay. To test the correctness of the modelling, water is poured on it from a watering can in order to see if it will find its way down the streams, and not settle in the wrong places.



First stage of a sketch-map. (F. Coffin, age 12).

Map-modelling.

[illegible] of part of school estate, with [illegible] details. ([illegible], age 15).

S U R V E Y I N G , C O N T I N U E D .

The next step is locating points by measuring the base, and observing the base angles, of a triangle. For this purpose, the instruments made and designed by ourselves.

Measurement of height. The height is found by measuring:-

1 A line from the observer to the object in question.
2 The angle of elevation of the top of the object.
3 The height of the observer's eye above the ground.

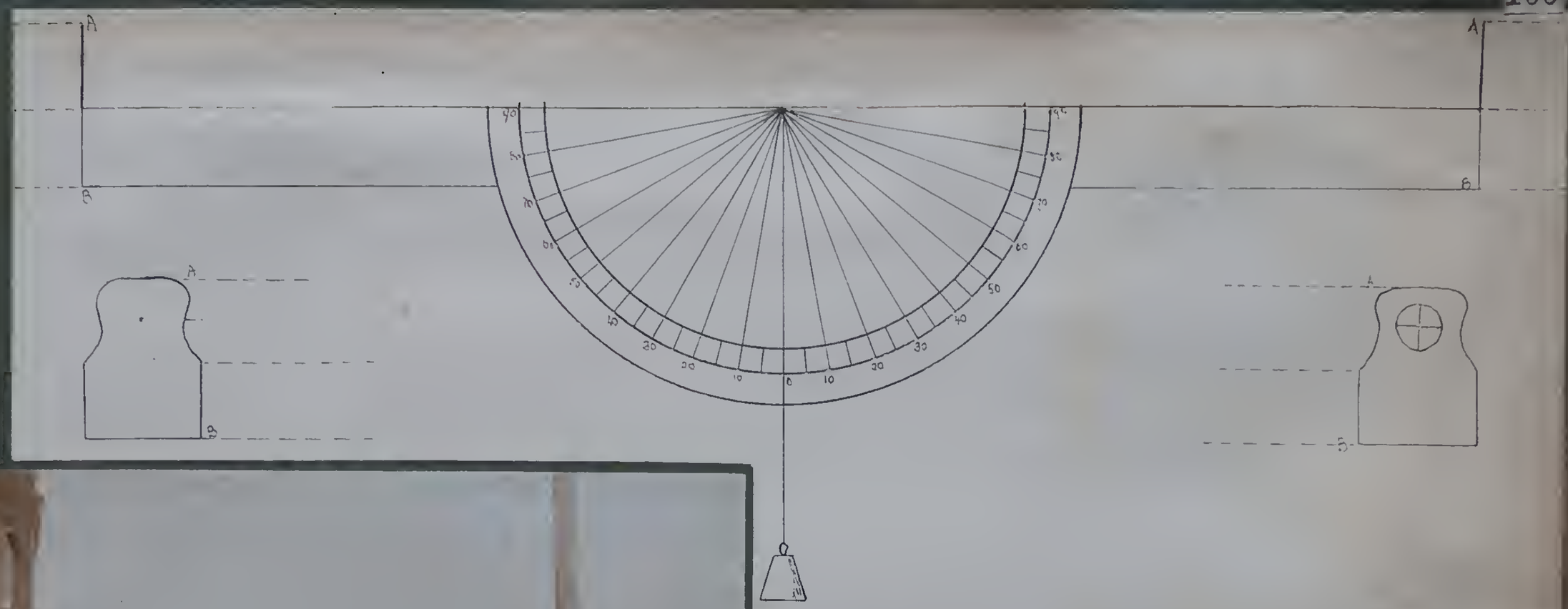
The first measurement gives the base of the triangle;
the second gives one of the base angles, - the other being a right angle;
the third must then be added to the perpendicular of the triangle.

Measurement of distance. The instrument used consists of a half-circle marked out in degrees, at the centre of which is a movable pointer that can be set by means of pins. In this case, both angles must be measured.

In the Upper School similar problems are worked out by trigonometric calculations based upon observations taken with the theodolite.

M A P M O D E L L I N G .

To obtain an accurate model of any part of the country, tracings are taken from a coloured contoured map, either the large scale Ordnance Survey or more often one of the contoured maps made by the Upper School. A piece of thick cardboard is cut to the shape of each contour line; and these, when piled one upon the other in the order and position indicated by the map, form the foundation of the model. This foundation is then covered with plastocene, or plaster of Paris, to give the curvature of the ground. When covered with plaster of Paris the model can be painted.



E. N. GIBBS.

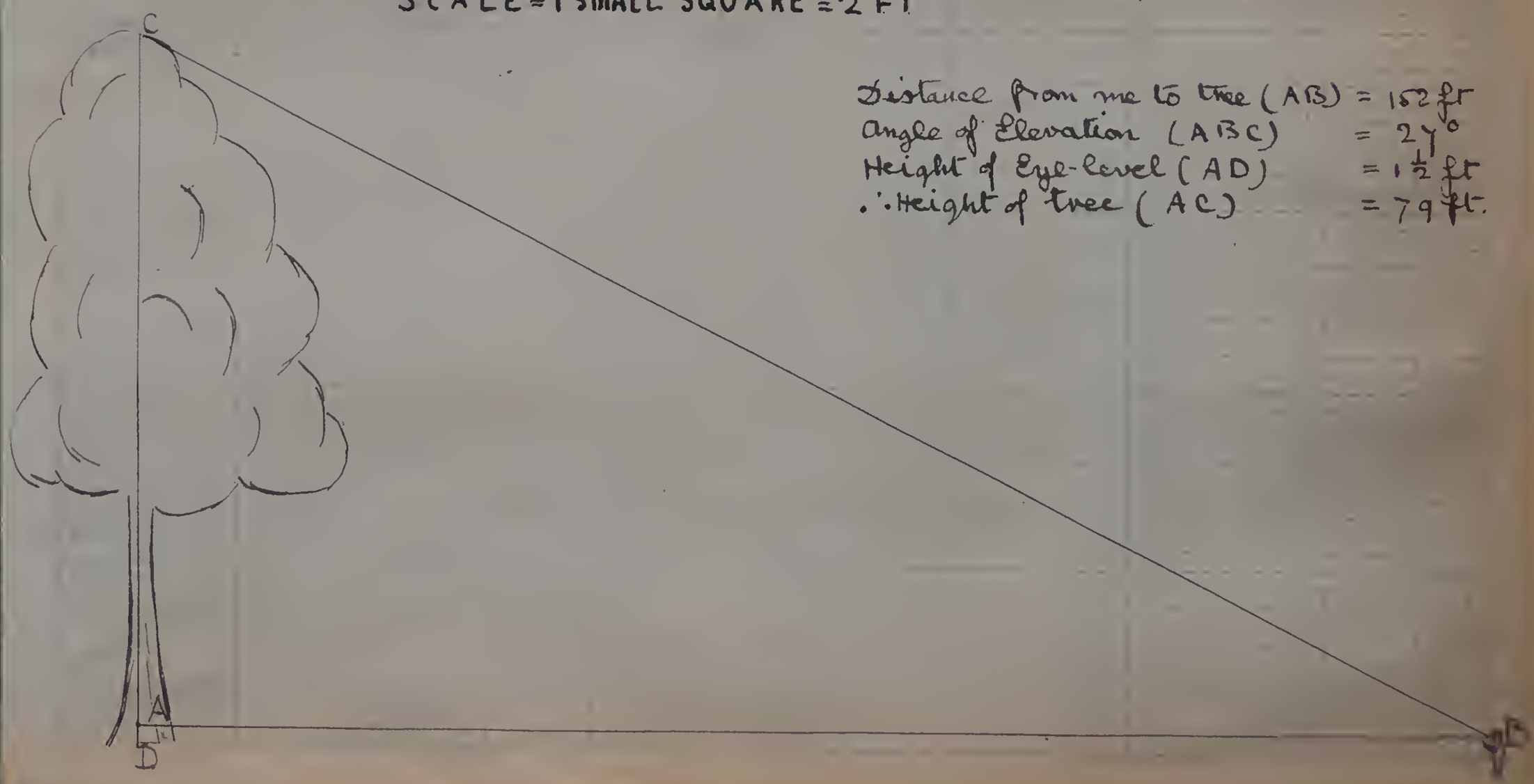
AGE. 16. 3 years. 11 months.

Instrument for taking angle of height.

TO FIND HEIGHT OF ELM.

HORSLEY
AGE 12 ½

SCALE = 1 SMALL SQUARE = 2 FT

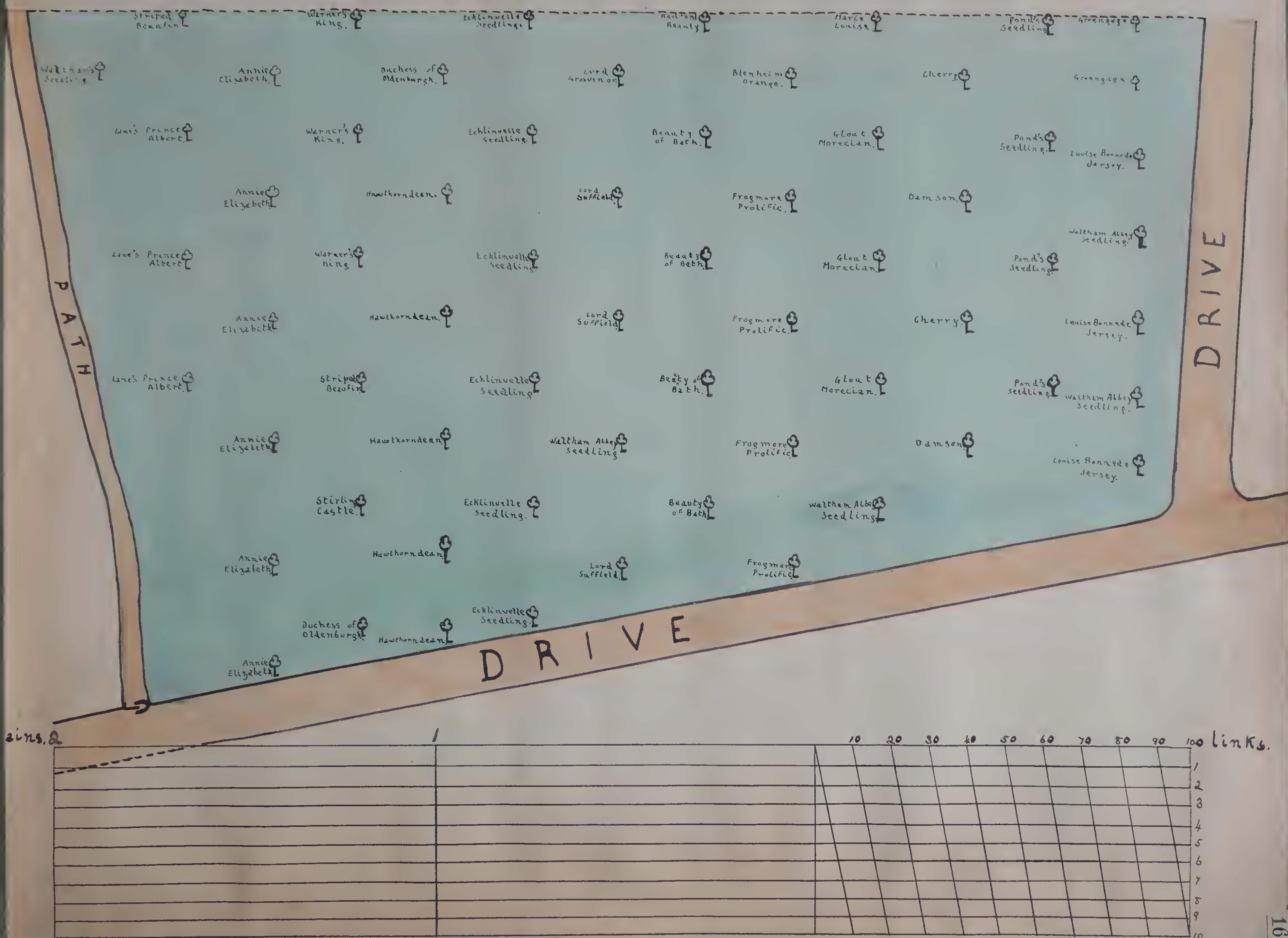


Distance from me to tree (AB) = 152 ft
Angle of Elevation (ABC) = 27°
Height of Eye-level (AD) = 1½ ft
∴ Height of tree (AC) = 79 ft.

Drawing plan of School orchard and measurement.

PART OF SCHOOL ORCHARD.

A.J. Monks



S U R V E Y I N G C O N T I N U E D .

[illegible] often happens that accurate plans of the orchard, garden &c, are needed in different departments of the school. Such plans are made in the way usual with surveyors,- by means of a perrendicular to a line marked out from corner to corner of the plot to be surveyed. Levels are also found when necessary, in order to draw contour lines on the maps.

In the Upper School complete surveys of the school estate are made, one of which has already been given in the first section.

Any special piece of work rendered necessary by drainage, levelling, and building operations, is done by one or other of these classes; and sketch maps are made of places visited during expeditions.

This advanced map making involves such a large amount of drawing, that the work done out of doors in fine weather provides sufficient indoor work for days when it cannot be done outside.

D. Kinnell (age 15).

Scale = half inch to a chain.

E X P E D I T I O N S .

In order to encourage the love of country life and country ~~lore~~ love by helping the children to find out for themselves as much as possible about the life of the district in which they live, expeditions are made on most of the half-holidays of the summer term. They are organised for the lower half of the School so that everyone may get one at least once a fortnight. Those in the upper half of the School are allowed to go or not as they wish,- whether for the organised expeditions, or in small groups independently. But they are encouraged to do so by prizes offered for work which is the result of such expeditions.

Organised expeditions. A certain number of the places of interest in the neighbourhood are selected with the view of including as many of its most striking features as possible- such as chalk downs, woods, heathery tracts, and villages of historical or antiquarian interest. Each class in turn visits these places, the date of each expedition being fixed at the beginning of the term. A few days beforehand a paper is posted up, containing questions about the place to be visited and the things to be observed there. These questions are copied by the class, and brought to the first composition lesson after the expedition. A class discussion takes place, and the composition is written about it.

In addition to these written records, others are made on the spot by those fond of painting or photography.

There are always members of the Staff in the party, and a limited number of volunteers from the upper part of the School. In many instances we have received great assistance from residents, in the way of pointing out objects of interest, and telling us old stories connected with the place.

WOOLMER.

Things to look out for.

What is Woolmer? What direction do you go to get to it? What soil is it? What are the commonest plants and trees? Is the ground cultivated? What is the ground used for? Is it wooded or open? Look out for "tumuli" (old burial mounds).

The Pond :-

How large is it now? How deep? Can you tell how large it is in wet weather? Does it seem to have any inlets or outlets? Which end of the pond are they? Are there many marsh or water plants?

What birds, insects or animals do you notice? Do they keep to any special places? (as the woods or the heath or the pond).

Woolmer Pond.

When I arrived there I took off my shoes & stockings & rushed into the water as fast as I could. At first there was a long stretch of small weeds which were quite hot, owing to the sun, & then there was a large piece of shallow water, which I rushed across, as fast as I could run. When I reached the deeper water, I had to stop suddenly, & I nearly fell over. I paddled about the pond for nearly a quarter of an hour, & then I got out the other side, rolled about in the hot sand to get dry.

After that I climbed up a little cliff & went through the heather which scratched my bare legs.

As I was walking along, a partridge flew up a few yards off, & there was a nest with about ten eggs in it, all covered over with dust & bits of heather, so that it was almost impossible to see. Further on by the waters edge I found a lot of Sundew which looked very fresh & shiny. I went on till I came to the marsh, where I expected to find some cotton grass, but to my disappointment I found it was too early for it.

After that I had to go back as fast as I could, as the brake was waiting

Esher Cunham

(age 12)

b Voluntary expeditions. As the result of the organised excursions above described, and the means of encouragement to be mentioned later, boys and girls, on reaching the Upper School, have generally acquired interests which make them wish to continue such excursions. In some cases they visit the selected places; but usually they go further afield in small parties, and explore the whole neighbourhood within reach. In either case they study the place visited more thoroughly, and devote themselves more especially to one subject; some, for example, study church architecture; others photograph birds and their nests, and so forth.

M I D T E R M A N D W H O L E D A Y H O L I D A Y S .

Until this year, 1903, it was our custom to have a holiday of three or four days in the middle of the summer term. Twenty or thirty of the older boys spent this time in camp, at some place too far off to be reached in the ordinary way. Among the places thus visited were:- Salisbury; Winchester; the Isle of Wight; Rye and Winchelsea; and the New Forest. On our way to the latter in 1902, we passed through the fleet assembled to celebrate the Coronation of King Edward VII. The rest either remained at the School, spending the time in day expeditions, or went to their own homes.

As with increasing numbers these lengthy holidays became more difficult to organise, this year we substituted single whole day holidays, at intervals of about a month. On these occasions, the School was divided into groups that went with some member of the Staff to places beyond the reach of the ordinary half-day expeditions

Camping in the New Forest.

Starting for an expedition.

These interests are encouraged in the following ways:-

1. The most important is the personal influence of those members of the Staff who are themselves interested in these pursuits.

2. A Show of such work during the year is held at the end of every summer term, and judged by a committee of masters. In order to encourage originality, there is no fixed list of prizes ; but prizes or commendation are awarded to those whose work, whatever it may be, has come up to the required standard.

3. A School Museum is in course of formation, which is to be a collection of such work done by the boys and the girls, and not to any large extent of permanent objects that soon lose their interest.

Some of the boys' work sent up to the Show each year is kept for the Museum, and it is intended that the objects shall be changed fairly often.

The Museum is also used as a working room for all who have shown keenness and ability in Natural History pursuits.

Nests photographed by C. F. Inser, A.C. 17.

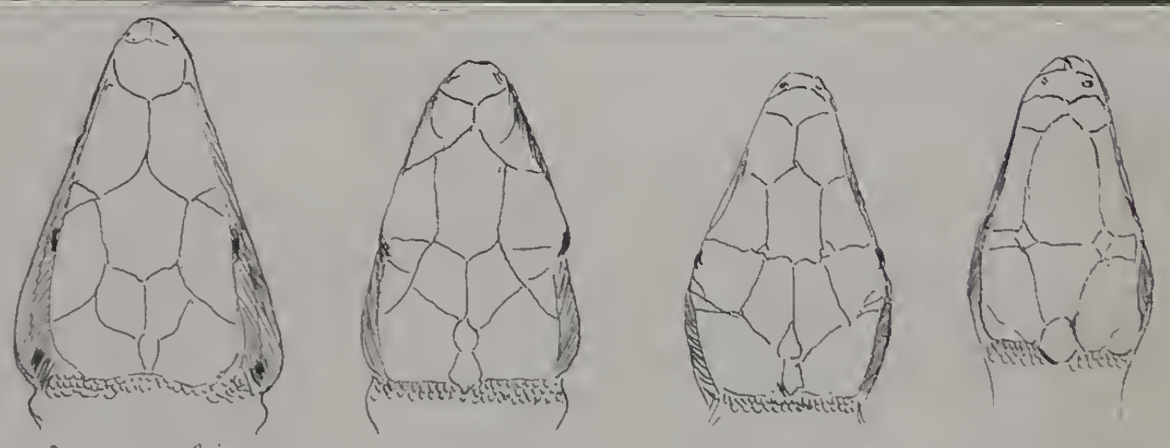
Case showing life-history of Large tortoiseshell butterfly.

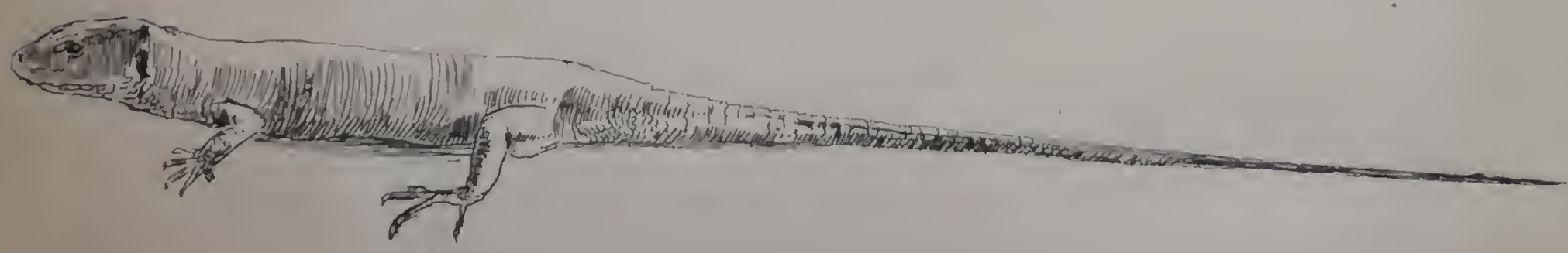
(J. Brooke, age 13).

b. The study of insects. Very little is done in the way of general collections, or which the object is to get as many specimens as possible. We encourage, however, drawings, photographs, and written records: the rearing of moths &c from the egg: the setting of specimens to illustrate the life-history of an insect: the making of collections to show protective Mimicry, &c.

c. The study of living things kept in captivity: such as ants, snakes, lizards &c; with drawings and written observations upon them.

H. P. Smith (age 15)





GREEN LIZARD

Oak-eggar. (L. Quercus)

We were given one of these which was found walking across a path. It was two + a half inches long + dusky brown with black bars + hairs all over.
It is capable of sending poisonous hairs into you, if you handle it. The moth is almost exactly like a drinker, only rather larger.

E V Newnham
(age 12)

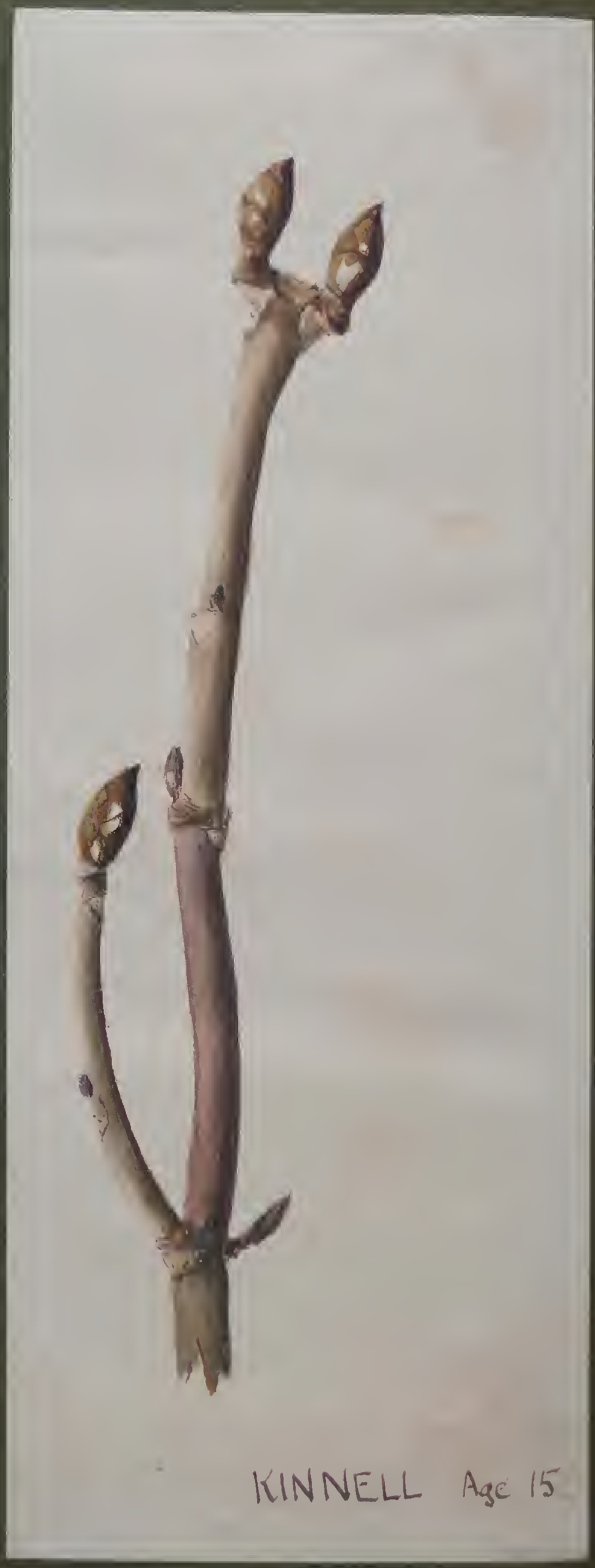
H. P. Smith.

The Green Lizard (Lacerta viridis)

The Green Lizard sometimes grows to be as much as 14 or 15 inches long, the tail measuring about twice the length the length of the body.
This lizard is brilliant green above, pale blue on the throat, and bright yellow below. The tail, towards the end becomes a dirty brown colour.
It is rather a heavily-built reptile, nevertheless on sunny days it is exstreemly active.
On dull days it will hide away, or remain quite motionless on some plant or branch.
The toes on the hind feet are very long, and are furnished with sharp claws.
The Green Lizard is very fond of flies and worms which it eats in great quantities. One of mine seemed very pleased with a great green Grasshopper, which I gave him; = an insect nearly 1½ inches long, and very juicy!

The study of plants and trees. Here again we do not encourage monster collections of pressed flowers, but rather drawings and written observations illustrative of the whole life of the plant; photographs of trees; collections of leaves, seeds, fruit, bark &c; specimens of different grasses, or the different members of a given family; specimens illustrative of fertilisation, the distribution of seeds &c.

For preserving flowers we are trying a new process of drying them in sand in order to preserve form and colour, recently discovered by the British Botanical Association.



KINNELL Age 15

arian studies. Saddle of the horse carotnet. (F. Tilney, age 1½.)

NATURAL HISTORY, AND OTHER HOBBIES, CONTINUED.

e. The study of the neighbourhood by means of drawings, photographs, and written descriptions of interesting villages or natural features.

f. The study of geology by means of maps made from original observations; written descriptions of the localities investigated; and collections of specimens of soils, rocks, fossils &c, found in the neighbourhood.

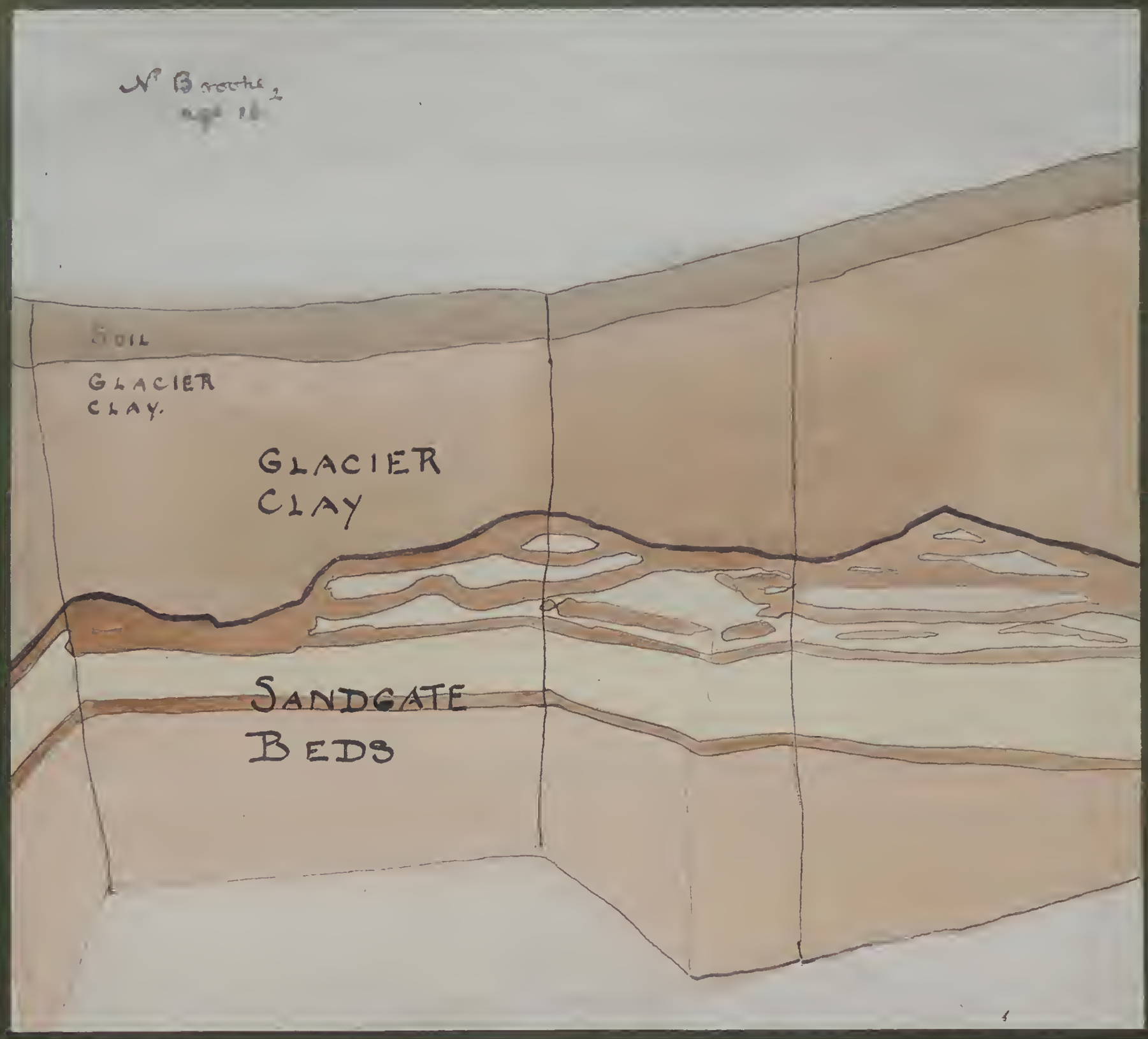
g. The study of architecture by means of drawings, photographs, plans, and written descriptions of old buildings in the neighbourhood, especially of the churches and cathedrals within reach, or of special features of interest that they contain.

Old Oak Porch at South Hayling, Portsmouth.
July 1903.

Old Oak Porch at South Hayling, Portsmouth.

The porch is an exceptionally fine old fifteenth century one. It is plain in character and simple in construction, yet is as good as many a more elaborate one. Plenty of fresh air can get in through the wide entrance and aperture above it, whilst the ample roof protects all the wood work from the weather. The state of preservation in which this old porch stands after 400 years exposure is very remarkable; and may be imagined from the fact that, with the exception of one small piece of oak less than four inches long, the whole porch stands now as it did the first day it was put up. The oak is now quite white.

From an architectural note-book (c. A. Tilton, age 15)



The drawing above shows the Sandgate Beds covered by a stiff clay containing broken flints. The Sandgate Beds were laid down in the Cretaceous period in deep seas & therefore were stratified; but the clay lying on top of it is not & it also contains broken flints which proves that it must have been laid down by a glacier after the Sandgate Beds had risen out of the sea & become dry land. This drawing was made from a sand pit one & a half miles from Bedales. The cutting is about fifteen feet deep & was made so as to get sand for building purposes.

These interests are encouraged in the following ways:-

1. The most important is the personal influence of those members of the Staff who are themselves interested in these pursuits.

2. A Show of such work during the year is held at the end of every summer term, and judged by a committee of masters. In order to encourage originality, there is no fixed list of prizes ; but prizes or commendation are awarded to those whose work, whatever it may be, has come up to the required standard.

3. A School Museum is in course of formation, which is to be a collection of such work done by the boys and the girls, and not to any large extent of permanent objects that soon lose their interest.

Some of the boys' work sent up to the Show each year is kept for the Museum, and it is intended that the objects shall be changed fairly often.

The Museum is also used as a working room for all who have shown keenness and ability in Natural History pursuits.

The Show. Summer Term, 1902.

The Museum and Natural History Room.

P H Y S I C A L T R A I N I N G .

The chief condition of health is fresh air. It has already been shown that a large part of each afternoon is necessarily spent in the open air, in outdoor work as well as games, walks &c. In the middle of the morning class work there is an interval of 15-30 minutes, according to age, that must be spent out of doors, or in wet weather in the covered quadrangle which is open to the air. This is the minimum in winter. In summer a much larger part of the day is spent out of doors. But it is necessary to have fresh air indoors as well as out; not only, therefore, are windows kept oper in all rooms day and night, but the building is so arranged that the class rooms open on to the quadrangle, so that stuffy rooms and corridors are impossible.

b. The second condition of health is proper food. This is both plentiful and v ried, and may not be supplemented from any other source; the "tuckshop" and hamper that are traditional in English schools are not allowed at Bedales.

c. Clothing must be warm, and not impede free movement. Nothing but wool is therefore allowed. Boys wear a loose jacket, knickers and flannel shirt: girls, a blouse and a cloth skirt and knickers. All change for outdoor work and games,- the boys into "flannels", the girls into a gymnastic costume. There is no special Sunday dress. Tall hats, Eton suits and collars are not allowed, nor corsets for girls.

d. It is of immense importance to establish daily habits of health. All have a cold sponge bath every morning; times are fixed for attending to the daily bodily needs; after exercise all must have a brief sponge or shower bath; washing is done before going to bed, not in the morning; and the younger are inspected by the matron until they can be promoted to a "clean" list.

e. At the beginning and end of every term measurements are taken of height, weight, and chest girth, and the results graphically recorded. From these it can be seen if a child is not making normal progress. Growth in height is normally greatest in the summer; in weight and chest capacity, in the winter.

Boys' indoor and outdoor clothes.

Girls' indoor and outdoor clothes.

P H Y S I C A L E X E R C I S E .

2. Drill. From 3-4 hours a week are given to drill and gymnastics. For the girls and younger boys the Swedish system is followed: for the older boys, free movement drill and gymnastics are taught by army instructors. Whenever possible, drill is taken out of doors, there being an open air, as well as a covered, gymnasium.

In addition to this drill, which has for object the development and control of the muscles, there are also formal inspections at stated times. Thus, before dinner each day the whole School stands at attention in different divisions, which are called over and inspected by members of the Staff, or - more often - by the older boys and girls. The weekly clothes inspections have been already mentioned.

[illegible] ages, from 10. All the younger children must play in the school games twice a week at least, and usually do so on four afternoons unless they obtain leave for natural history or other expeditions. After the age of 15, a boy or girl can get permanent leave off games, if they can show that they have interests which will give them sufficient outdoor exercise instead. The school games are cricket in summer; and in winter, football for boys only, hockey for girls and boys together. Matches are arranged at frequent intervals with other schools or local clubs.

Other games, such as lawn tennis, fives, and golf, are also played, but are optional and not allowed to interfere with the school games.

Exercise in the form of games or runs must be taken, whatever the weather. On days when the ground is too wet to allow of the usual games, a run along the roads is substituted, or there is a cross-country paper chase.

In the spring term athletic sports are held, but no prizes are competed for.

Football Team, 1903.

Hockey Team, 1903.

[illegible] in the quadrangle.

Hockey in the quadrangle.

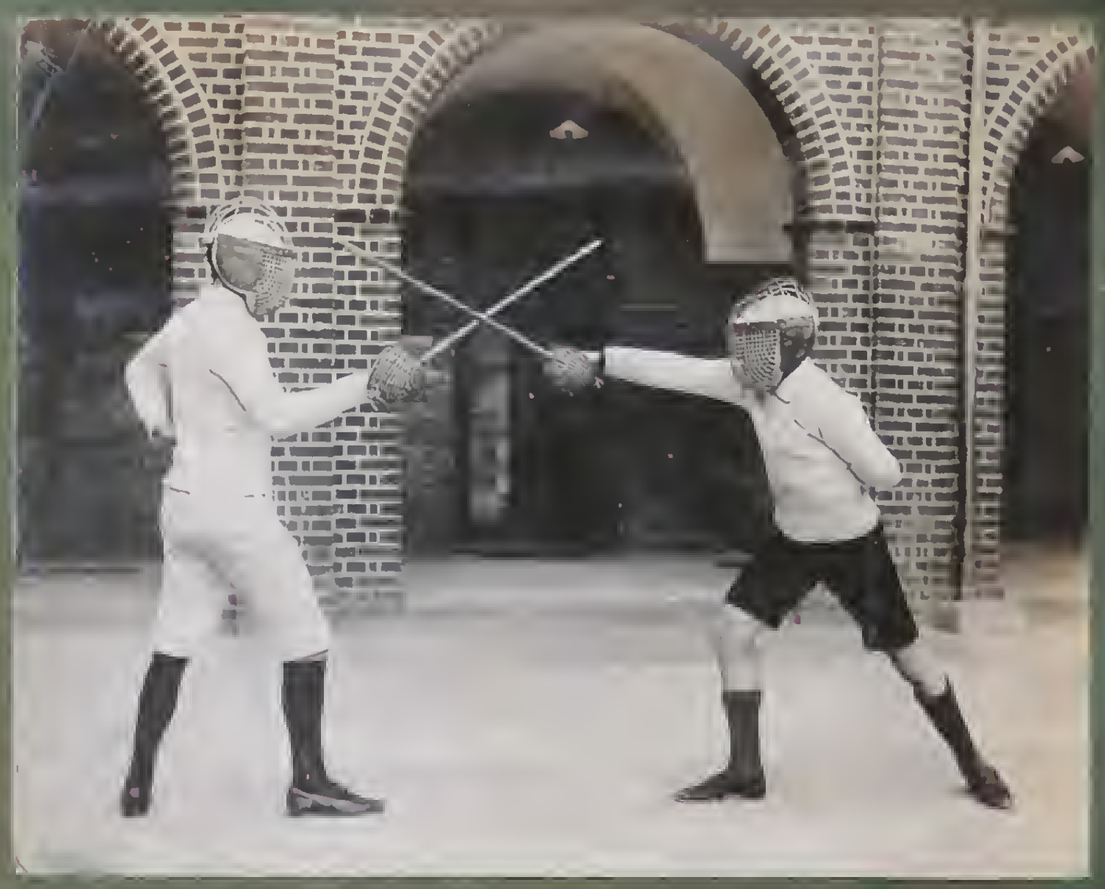
d. Boxing, Fencing &c. Such forms of exercise as these are voluntary, but are encouraged, and in some cases allowed instead of gymnastics.

e. Shooting. All boys in the upper part of the School are taught to handle and clean a rifle and to shoot at a mark. There is no School Volunteer Corps, and our object is not so much to let them "play at soldiers", as to train them in handiness and self-reliance, and to give them the power, in case of need, to help to defend their country. We have built a small screened range, on which we use miniature rifles up to 100 yards, or service rifles with the Morris Tube up to 200 yards.

e. Walks, Rides &c. There is always a long walk on Sunday afternoon.

On the two half-holidays each week, leave can be obtained to go for walks or bicycle rides to neighbouring places of interest; and in the summer regular expeditions are organised to certain of these places.

f. Manual Work. The work in garden, farm, dairy, and workshop has already been described..



M U S I C .

. Instrumental music. This is taught only to such as seem to have a distinct musical bent. The only distinctive feature here is that no lesson or time for practice is taken from the time given to games but it is treated as an alternative to other manual work. There is a School orchestra, consisting of string and wind instruments; three practices of an hour each are held every week. At School concerts or plays the orchestra has performed symphonies of Haydn, Beethoven, Mendelssohn, and Schubert; Sullivan's Incidental Music to the Tempest, and Mendelssohn's to the Midsummer Night's Dream; and the Orchestral Music to the Messiah, Elijah, &c.. The orchestra also plays the accompaniments to hymns and psalms at the Sunday evening services. During each of the winter terms three or four musical evenings are given, which afford opportunity to both choir and orchestra, and also to individuals, of singing or playing in public; and at Christmas each year a more formal concert alternates with a Shakespeare play. Throughout the musical work the idea of combination and social service predominates, rather than that of individual performance.

2. Vocal music. This is taught to all alike, whether they have any special air or voice or not.

Aims. 1. To teach all to sing in tune and time and, as fitly as may be, in unison and harmony.

2. To make all familiar with the best choral music that is in any way within the reach of a School choir.

3. To make as many as possible capable of taking an intelligent interest in music.

Means. In the lower part of the School, all go through a course, the object of which is to make them familiar with the variations of length of note, rhythm, pitch, and key; to teach them to read at sight, and to be able to write down familiar simple airs.

There is a half hour's singing class for the whole School every day, in which they are taught to sing good songs in unison, rounds, part songs, psalms, and hymns, as well as good choral works. This choir, as made above, includes all whose voices are not actually breaking.

In each of the younger classes an hour a week is given to work of the following kind:-

By analysis of tunes that they know and of dances, the elementary notions of note values, rests, rhythm, time, and pitch are made clear and familiar. Any devices that seem likely to make them realise these ideas are employed, such as stepping the scales in steps and on spaces actually chalked on the floor; forming living chords, with groups of children on each of the notes; and action songs for illustrating lengths of notes and rests, time, &c.

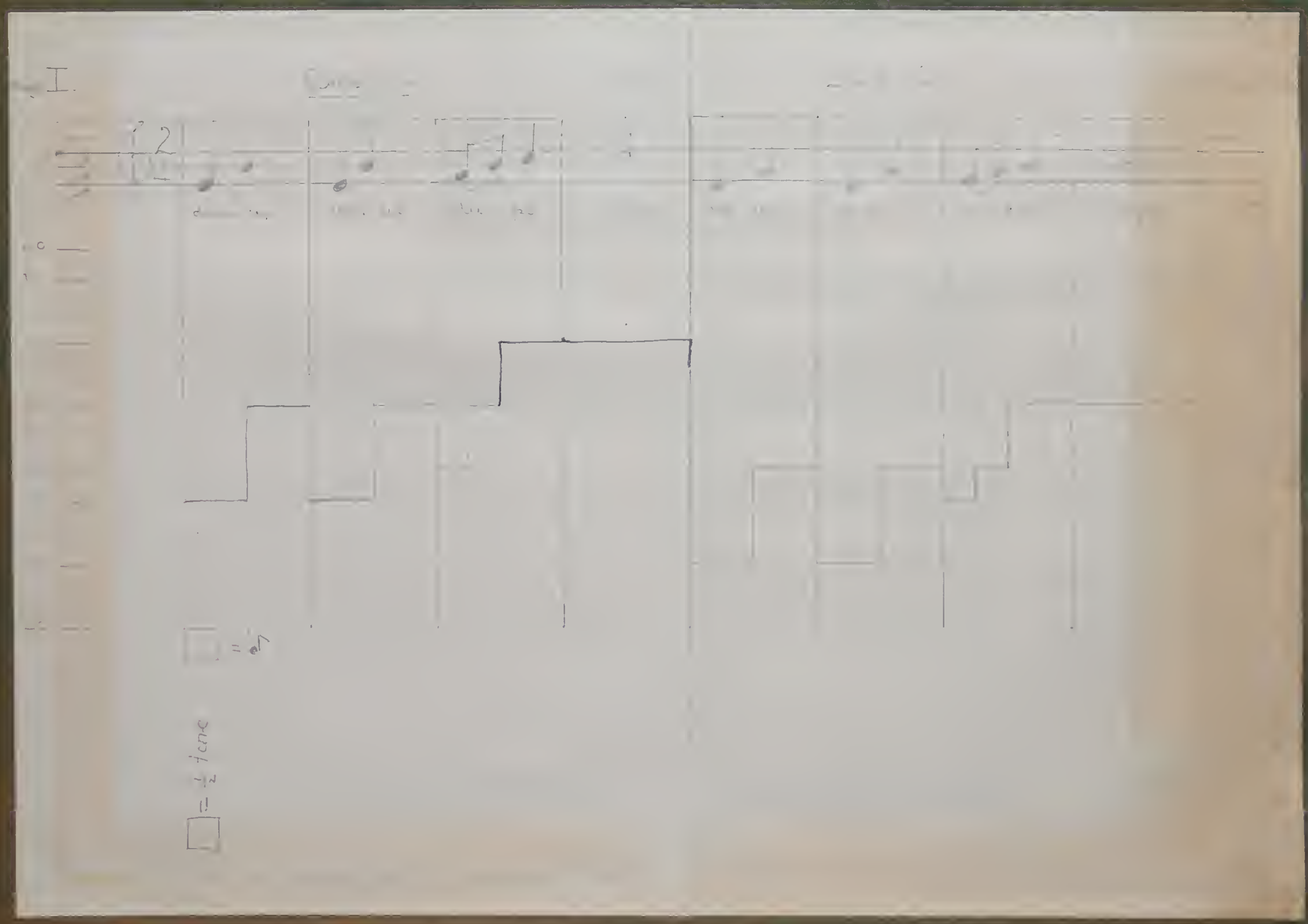
Staff notation is used, in combination with the tonic sol fa idea of the movable DO. Tunes are also written out on a squared blackboard,- squares upward and downward representing pitch, and squares across representing note lengths, in order to impress tune patterns on the mind.

There is also constant drill in reading unseen passages from the blackboard, or from a stave made with the hand; and in writing down known simple airs.

Airs are analysed; and with the more advanced some attempt is made to get them to suggest a simple theme, and build a tune up on it. The tunes required for the French and German songs in the modern language classes are taken first in this way as unseen reading exercises.

Breathing and voice production are also taught.

The work with the whole choir consists of learning and singing songs, glees, oratorios &c, such as are given in the following list:- Sharp's Book of British Songs; Part Songs for unison singing; Selections from Novello's Part Songs, Rounds, National Anthems of all nations; German Volkslieder; larger choral works, such as Handel's Messiah; Mendelssohn's Elijah; Stanford's Revenge; Bach's Christus.


I.
= ½ time

... ATING ... Occasional evenings ("Merrie Evenings") are set aside for songs, recitations, readings, and dramatic scenes, got up and frequently written by the children. Some account is given below of a Dramatic Club which produced four original plays in one winter.

At the end of the winter term there is usually a performance of one of Shakespeare's plays. For this purpose, a stage has been designed and put together by the boys; the scenery is painted, and the dresses and accessories are mainly made in the School.

THE BEDALES DRAMA.

It is not the Bedales Stage of which I wish to speak, but the Bedales Drama. The two have not had any noticeable connection. The Stage flaunts itself before the eyes of the multitude, content with nothing less than the works of the immortal Shakespeare—receiving a column and a half of eulogism in the local paper. The Drama has lived from hand to mouth, and in holes and corners, rehearsing in class-rooms before breakfast in the grey of the early morning, with an empty stomach, dressing its actors in borrowed plumes—its policemen in pyjamas bound with red tape, its mediæval villains in bicycle capes, and its aristocracy in crowns and ermine graciously lent by the Stage.

Its plays have been of a very decided type, the commission of a heinous crime and its condign punishment being the subject most frequently chosen. The earliest specimen of the Drama which I can recollect was of this character. No manuscripts of it are known to exist, and I think I might say that no manuscript of it ever did exist. The plot of the play having been explained to the actors, the dialogue was left to their own discretion, with surprising results. Its title was "The Blood-stained Cabbage Stalk." The details of the story have passed from my recollection.

Its appearance produced an outbreak of other plays, two of which were performed, the remainder being nipped in the bud by an edict which went forth for their suppression;—the authorities naturally objected to the fact that three murders occurred in a play lasting ten minutes. Of the two which were performed one was entitled "The Polish Jew;" its chief character was called Isaac Sloberleski, and it contained a murder, resulting in a ghost which haunted the murderer in his nightmares. The other dealt with crime in London, and contained a scene in which a judge, sitting behind a very insecure blackboard, gave three policemen (in pyjamas bound with red tape) a very severe wigging for neglect of duty. No MSS. of these plays have survived.

The suppression of these plays produced a long interval of inactivity, lasting until last Autumn Term, when there was a revival of the Drama, which resulted in the production of some twenty-five plays in two Terms, the performance of three, and the formation of the Dramatic Club. An account of "Miser Jim," the play which heralded the new outbreak, will be found elsewhere. It will be noticed that the subject is the one with which we are already familiar.

As a result of the enthusiasm displayed in connection with "Miser Jim," it was decided to offer two prizes, one to the second set and one to the third set, for the best three-act play. Twenty-two plays were sent in, and one of the prizes was awarded to the writer of "The Rival Bridegrooms," a play of which I expect that more will be heard next Term—more than that I am forbidden by the Dramatic Club to say. One of the conditions of the competition was that no murders were to be committed, and this condition appears to have offered serious difficulties to some of the writers. In one play, entitled "Plot and Counterplot," a villain meets his confederates, and explains his plans for revenge:—

Confederates.—Kill, kill, kill ——

Villain.—No, no, *we mustn't.*

He then mounts a barrel (which has a detective inside it) and explains his plans in fuller detail. Of course they are overpowered, and all are *stunned*. In another play, entitled "King Marcus and Prince Simly," the prince, whose throne has been usurped, says to his friends, "We must get up *a sort of army*—but *let no blood be shed.*" Later we have the stage direction, "Enter Prince Sim and army," and the moral power of this New Model army produces the desired result.

The construction of the plot in several is very original and interesting. The chief incident in "A Surprise" is the return of a long-lost uncle through a first floor window at dead of night, in order to give his sorrowing relatives a pleasant surprise. In "Kidnapped" the Mayor of Bradford escapes from his captors by a curious ruse. He promises to conduct them to a place where there is buried treasure, and on the way he drops a note which is picked up by a friend of his. The friend returns to Bradford, collects a body of men, and is ready to receive the villains at the appointed place. In "King Marcus and Prince Simly" above mentioned, we find policemen in Spain in the Middle Ages; the king keeps his crown at the bottom of a tub in the cellar; some villains "took it for grantage" that it was there, and when caught trying to steal it they said they had come to ask the king for some money to help them to go to America.

Space does not admit of my mentioning all the other plays sent up for competition. Perhaps the most noticeable feature about them all was the great amount of imagination displayed, combined with the want of knowledge as to how to use this imagination. In saying this I do not wish any one to think I have a poor opinion of the Bedales Drama. Most of the writers deserve great praise for the keenness with which they wrote and the trouble which they took, but writing plays is an art which requires practice as much as (or perhaps more than) anything else, and I hope that some of the writers will go on and prosper, learning to plan out their plots more carefully, and to work out the details of action and dialogue more thoroughly.

T.W.G.

From the Bedales Record, 1906.

Illustration to Shakespeare's Tempest. (Block design by F. Nash, age 14). From the Bedales Record, 1900.

"For my part, the sea cannot drown me."
TEMPEST, ACT III.

THE PLAY.

—As Seen from the Wings.

On a hot July day, when one ought to be on the cricket field, I find myself set down to write an account of the Christmas Play, and I make a solemn protest and demand that the Editors of the "Record" shall in future always appoint, at the time, reporters and reviewers of all things to be reported or reviewed. I will write down what comes to me through the haze of a couple of Terms, and, if it is more than inadequate, readers must know that my impressions of the Play are formed partly from what I saw, in a dim light from the gallery above, reflected in the faces of the audience, or caught by scraps in the wings waiting anxiously for cues to start "come unto these yellows sands" or to hustle in nymphs and reapers in some order round their maypole.

But there are scenes that no one could forget. The opening tableau, the thunder and lightning, the heave-ho-ing, the stolid ship upon the tossing waves, the cries of "We spleet! we spleet!" and then the gruff bo's'n (woe to the mariners who would call him boatswain) was surely in his element and quite ininutable. One remembers long orations by Prospero which bored (may we say so?) not only Miranda; but could we complain when we think of what she must have had to stand, being her prosing old dad's only listener during how many years! Hoffmann played a hard part well. The trixy spirit's coming was always welcome, and he, his costume, and his trebled unseen voice were highly appreciated at all performances. How we watched too for the entry of dazed Ferdinand led by the magic music. . . "Where should this music be? i' the air, or the earth?" I see him now, flaxen wig and all, moved, some say, by artfully concealed clockwork mechanism, arranged, probably, by his brother, the stage carpenter—much valued carpenter, equal to anything from ships in storms to ribboned maypoles floating through the air!

As to the Stefano scenes, there was controversy, I believe, as to whether or no he was too drunken: I doubt if Shakspere would have found it overdrawn; certainly the groundlings did not. All admit that the fool was perfection of fool. I chuckle now and think of him; and the most vile monster in his rank sheepskin (peace, Peter, it *did* smell), did it not fill one with disgust with its horrid grunts and beastly antics?

What of the King and his courtiers? Where could more pompous Gonzalo have been found, or more evil-looking Sebastian and Antonio? There was good acting in that conspiracy scene, and the audience were quick to take it.

The Dances—I could tell you a great deal about the dances. Mercifully the audience at the performances were spared the hoarse whispers from the wings sometimes heard at rehearsal time: "You little owl!" "Your ribbon's crossed," "Cheer up!" "*Get* on!" "*Do* smile!" "You aren't at a funeral!" Except for one scarce observable hitch on Friday, the maypole dance went capitally. Three allegretto bars, and the garlanded curtain rod was spirited into its place, and nymphs and reapers at the end of their swaying ribbons were sliding and gliding, skipping and tripping, in a way that afforded intense pleasure, we were told, to onlookers, who knew not the horrid risks of tangled ribbons that kept us a-tremble in the wings.

It is hard to realise that for Bedales it was reserved to be the first to produce the "Tempest" with Sullivan's music, yet we are told that so it was. Apparently it is the difficulty of it (and difficult it is) that daunts most managers, the beauty of it is undeniable. Anyway, the School Band, Mr. Van de Velde, baton in hand, at their head, rushed in where others had feared to tread and covered themselves with glory. Quite half the success of the "Tempest" was due to the music and the musicians.

O.B.P.

recreation-

c. DANCING. An evening in each week is given up to ~~dancing~~ the younger children ~~dancing~~, and once a fortnight there is a dance for the upper half of the School. The object is healthy, pleasurable, and ordered exercise, rather than training in convertional deportment. Instead, therefore, of dressing up for the occasion, boys take off their jackets, and dress as for any other form of exercise.

d. DEBATING &c. There are three debating societies, corresponding to the Upper, upper Middle, and lower Middle School. These meet every few weeks, and discuss questions of interest to their members.

There is also a Scientific Society, with membership limited to the upper part of the School, at which papers are read by the members and discussed.

A dance in the Hall

JUNIOR DEBATES.

WINTER TERM, 1901

February 19th.—The motion was. "That ice sports are preferable to water sports."

W. L. Roberts (Proposer): Mr. Chairman, Ladies and Gentlemen,—Ice sports teach you to use your nerve and keep you straight. When ice is good you can play games as well as you can play in the water When a person gets in you can use your nerve and try to get him out. (Hear, hear). You don't have all the trouble of undressing, because you only have to put on your skates. (Applause).

P. C. Gordon (Seconder) Skating is a very good thing for the ankles You get plenty of exercise without too much exertion.

P. D. Montague Mr Chairman, Ladies and Gentlemen,—I think that water sports are much better, for, one thing, you can always have water, but you don't always get ice A decent swim is far better than skating with a lot of people. (Applause).

R Lodge II: Mr. Chairman, Ladies and Gentlemen,—Mr Montague said you could get water all the year round, only that doesn't make it any more preferable, and most people don't mind the cold.

F. Money. Mr. Chairman, Ladies and Gentlemen,—If you want skating you can go to Canada, where they have it most of the year round

A Onlman I It is very useful to swim, and you can swim in autumn, summer and winter, and you can only have skating in the winter. You don't get much more nerve in skating. When you get under water it needs nerve to get on to land again

H Herzfeld You don't always get drowned at skating, only when you're in the water crabs come and bite your toes. (Laughter)

W Adams Mr Chairman, Ladies and Gentlemen,—Water sports are by far better. Besides being sports they do you real good. If you are shipwrecked you can always swim And when you are 5,000 miles from shore, although you can't swim 5,000 miles, you may be able to keep up till you are picked up Ponds are only frozen for a few days, and swimming lasts through all the summer Some people say you can get ice yachts For one thing the ice won't always bear them, and they aren't made in England, and they cost more to build than ordinary yachts (Loud applause)

W L Roberts You can go to swimming baths, and you can go to skating rinks, only you have to pay for more at a skating rink You get cramp in water, and you don't on ice You also get skating all the year round in Switzerland

For the motion	8 votes
Against	14 ,,

April 2nd.—The motion was: "That it is better to have four days' holiday at Easter and holidays from June 1st to September 1st than what we have now."

Bushill (Proposer). Mr. Chairman, Ladies and Gentlemen,—At Easter you only have three weeks, and you haven't time to go and stay anywhere. In the summer you can go out later, and do more things

Brooks (Seconder): Mr Chairman, Ladies and Gentlemen,—A long holiday gives you no chance of getting away from England And you would have to come back as soon as you get away.

Gotch (Opposer). Mr Chairman, Ladies and Gentlemen,—Having a very long holiday would be very tiring At Easter the days are very short, and there is plenty of time to go into the lab

Ashton (Seconder) Mr Chairman, Ladies and Gentlemen,—Very probably you forget most you've learnt You needn't always go away for Easter holidays, but when there are only four days you only have two days at home

Rowntree. Mr. Chairman, Ladies and Gentlemen,—In spring, although it is dark earlier, you can play indoor games In summer you can't birds'-nest and in spring you can. And it isn't so hot in spring as in summer.

P D Montague: Mr. Chairman, Ladies and Gentlemen,—You have nearly a month's holiday, and you come in for trout fishing You get thoroughly sick of long holidays. And in the summer there are such a lot of trips. And, as Brooks says that you have to come home after a short holiday, you have to come home after a long holiday And Curtis says that you can have sweets.

Adams: Mr Chairman, Ladies and Gentlemen,—There are often very nice plays on in the spring Brooks said that you could only go to the seaside for a few days, and you can have seven-and-a-half weeks In spring it isn't hot and it isn't cold

Gordon Mr Chairman, Ladies and Gentlemen,—I have nothing to say (Cheers).

Bushill Mr Chairman, Ladies and Gentlemen,—Gotch says he likes being indoors best, but not everybody likes being indoors. You might get the holiday at one long go, and not at two

For the motion	3 votes
Against	23 ,,
Neutral	6 ,,

From the Sphinx Record, 1901

e. LECTURES. On alternate Saturday evenings throughout the winter and spring terms, lectures are given to the whole School by members of the Staff and others, on subjects outside the ordinary school work. These lectures are usually illustrated by the Lantern, which is worked by some of the boys.

f. STUDY. At least half an hour every evening, and an hour on Sunday, is set apart for quiet reading. At these times, books must be read, not papers or magazines. There are junior and senior libraries, under the care of committees of boys and girls. On other evenings the older boys and girls have additional hours for private reading in connection with the History and literature classes, while the younger children are engaged in the manual occupations already described.

Smaller libraries are also being established, for use in the "form-rooms" only, of books suitable for the age of the different classes, and bearing on the work done during the term. Opportunities are made by the "form-master" for discussing these books informally with members of his "form".

g. THE SCHOOL MAGAZINE. Every summer term the "Bedales Record" is brought out. The first half is devoted to literary contributions,- essays, poems, class compositions, descriptions of incidents etc; and the second half to an account of the various activities of the School life;- the whole being illustrated by photographs and pen-and-ink drawings. The specimen cover given opposite will show not the form of the Record, and the nature of its contents. In the number in question, 11 pages were contributed by the Staff, and 60 by the boys and girls. Various extracts from past numbers of the Record have already been given in the preceding pages.

PUBLISHED EACH YEAR AT BEDALES SCHOOL

THE BEDALES RECORD

CONTENTS

Taking the Height of the Sun at Noon.
At Work in the School Garden.

Taking Weather Readings.
Surveying.

YEAR 1901-1902. NUMBER 14. PRICE 5 -

M A R K S, P R I Z E S, E X A M I N A T I O N S, &c.

We regard it as most important that competition and self interest should not be made the chief motive of work at School. We do not, therefore, employ marks or prizes in ordinary class work. Marks, however, are given in the test examinations at the end of term. Prizes are never given for School work, but only for work done in free time. In the spring term subjects are set for prize work:- partly literary, such as books to be read; essays, narratives, plays &c, to be written in prose or verse: partly practical, such as drawings of various kinds; maps and plans; scientific apparatus or models. Each pupil must choose one literary and one practical subject. The work is not competitive, as prizes are given for all work that reaches a certain standard of excellence. In the summer term prizes are similarly offered for voluntary work in the various branches of Nature-study, archaeology &c.

Once a year an inspection of the School is held by an external examiner. We ask some man of note in education to come down during the course of the term and inspect the School, visiting all the classes and seeing the teachers at work. The teachers then draw up examination papers, which are submitted to the examiner for approval and criticism. The children's written answers are also sent to him after being marked by the teachers. So that he forms an impression of the School both from his own observation of the work, and from the results as tested by the examination. This impression he embodies in a Report, with criticisms and suggestions upon points where he may think alteration desirable. In this way we think that we get, both for pupils and teachers, the advantages of the examination test, without having to adapt our work, or sacrifice our principles, to mere examination requirements.

AN EVENING WALK.

(Prize Poem, Spring Term, 1903).

Gladly we turn our steps to home
As gathering darkness bids us come.
The pavements wet with recent rain
Reflect the flickering lamps again,
Where from the busy lighted town
The dusky road slopes gently down;
Down past the houses through the night,
Past where the last lamp sheds its light,
On to the bridge with sudden rise,
Where underneath the river lies:
Where peering o'er the low stone wall
We dimly see the waters fall.
Then on the road winds up the hill,
By trees and fields now dim and still,
By gardens trim on either side,
Whose hollyhocks and hedges hide
The cottages that nestle back
Amongst the trees in shadows black.
The only signs of life they show
The curtained windows' cheerful glow.
Now on through woods where tall dim trees
Sway gently in the evening breeze,
Where turning from the road we pass
Through the thick wood on leaf-strewn grass,
Up the dim glades 'mid bush and briar
Where only late the airy choir
Of humming gnats have ceased their flight,
Swimming in shafts of golden light.
Then down to cross the rippling stream,
Where the thick alder bushes seem
To guard the streamlet's narrow track,
And vainly try to hold us back.
Now stumbling through the boughs outspread,
Showering their drops from overhead;
Now stepping soft with muffled foot
On needles thick about the root
Of fir and pine, where seems to dwell,
More fragrant still to-night, the smell
That calls to mind this wood in day
When on the trunks light sunbeams play,
And pigeons coo, and squirrels bound
From tree to tree and branch to ground.
But now the wood is fast asleep
Save when a rustling marks where creep
Some timid hunters of the night,
Who, hearing us, make hasty flight.
The gate toward which the path now bends
Marks where at last the firwood ends;
The moorland tracts beyond it rise
Up to the stars whose steadfast eyes
Look calmly down upon the heath
That stretches out so far beneath.
Our own steps' sound, the night-jar's cry,
The fitful breeze's mournful sigh,
Alone disturb the silent spell,
That hangs o'er common, moor and fell.
And now in front the windows' light
O'er the dark moor shines clear and bright.
With willing steps we onward go
To reach the fireside's cheerful glow.
Let the night now bring what it may,
We'll stop within until 'tis day.

H. F. Sambrook
(age 16)

When you have done looking
at this Book, kindly
close it & fasten the clasps.